DEPARTMENT OF AGRICULTURE AND TECHNICAL
INSTRUCTION FOR IRELAND.

REPORT

OF

PROCEEDINGS

UNDER

THE FERTILISERS AND FEEDING STUFFS ACT, 1906,

AND UNDER

PART II. OF THE WEEDS AND AGRICULTURAL SEEDS (IRELAND) ACT, 1909,

FOR THE YEAR

1911-12.

Presented to both Houses of Parliament by Command of His Majesty.

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To

His Excellency John Campbell, Earl of Aberdeen,
Lord Lieutenant-General and General Governor of Ireland.

May it please Your Excellency,

I am directed by the Vice-President to submit to Your Excellency the Report of Proceedings under the Fertilisers and Feeding Stuffs Act, 1906, and under Part II. of the Weeds and Agricultural Seeds (Ireland) Act, 1909, for the year ended 30th September, 1912.

I have the honour to remain,
Your Excellency's faithful Servant,
T. P. GILL,
Secretary.

Department of Agriculture and
Technical Instruction for Ireland,
Upper Merrion Street,
Dublin, 18*th April*, 1913.

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Dublin Castle,
19*th April*, 1913.

Sir,

I have to acknowledge the receipt of your letter of the 18th instant (G1496–13) forwarding, for submission to His Excellency the Lord Lieutenant, the Report of Proceedings under the Fertilisers and Feeding Stuffs Act, 1906, and Part II. of the Weeds and Agricultural Seeds (Ireland) Act, 1909, for the year 1911–12.

I am,
Sir,
Your obedient Servant,
J. B. DOUGHERTY.

The Secretary,
Department of Agriculture
and Technical Instruction,
Dublin.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

PROCEEDINGS UNDER THE FERTILISERS AND FEEDING STUFFS ACT, 1906, AND UNDER PART II. OF THE WEEDS AND AGRICULTURAL SEEDS (IRELAND) ACT, 1909.

STATEMENT FOR THE YEAR ENDED 30TH SEPTEMBER, 1912.

The following report contains the proceedings of the Department under the Fertilisers and Feeding Stuffs Act, together with a summary of their operations under Part II. of the Weeds and Agricultural Seeds (Ireland) Act.

I.—SAMPLING.

During the year under review the Department's staff of official samplers employed under the Fertilisers and Feeding Stuffs Act and the Weeds and Agricultural Seeds (Ireland) Act consisted of 14 Officers of the Department and 43 Agricultural Instructors. A list of official samplers is given at page 28 of the Appendices. As each county is represented by at least one official sampler, it will be seen that through the agency of these officials the Department are enabled to keep in close touch with the conditions of the trade in manures, feeding stuffs and seeds in every part of the country. Samples of these materials are regularly taken in every county, and it has therefore become very difficult for the continuous sale of inferior or adulterated materials to escape detection.

As the operations of the Agricultural Instructors in their capacity of official samplers are necessarily confined to their respective counties, the Department again detailed two of their officers to make enquiries as to the class of manures, etc., sold in the country as a whole. One of these officers devoted special attention to imported materials, and, accordingly, examined during the season numerous consignments lying at railway stores or shipping wharves. All the chief ports were visited, and particulars obtained of any materials being introduced into the country which had not hitherto come under the notice of the Department, or which appeared to be of doubtful value. In the few cases in which it was necessary, the Department were by this means enabled to take effective action before the materials in question reached the farmer.

The total number of samples received in the Department's offices amounted to—

568 fertilisers,	of which	158	were tested.
297 feeding stuffs	,,	156	,,
2,342 seeds	,,	788	,,

A table showing the number of samples of these commodities taken in each county will be found at page 29 of the Appendices.

Though the visit of an official sampler to the stores of a trader in the discharge of his duties must necessarily entail a certain amount of trouble to the trader concerned, requiring, as it does in many instances, the clearing out of stores, etc., to make room for the sampling operations, the production of invoices, etc., the Department are glad to report that in no instance was any difficulty placed in the official's way. Any information desired was readily furnished, and, where necessary, manual assistance in the actual sampling was willingly given. In previous years the visit of an official sampler was often regarded by a trader as an aspersion on his business methods, or as a reflection on the quality of his goods. It is now, however, almost universally recognised that the Department's action in this direction is aimed solely at the improvement of the trade in agricultural materials, and that the supervision which is exercised over the trader in his business is as much in his own interest as in that of the farmer.

One difficulty which the Department have met with in many cases in their efforts to improve the quality of the agricultural materials supplied to the farmer, is the want of knowledge of many traders as to the nature of the goods they are selling. The result has been that, from time to time, traders have stocked manures, etc., for sale which a little technical knowledge would have enabled them to see were very poor in value. To overcome this difficulty the Department inaugurated, a few years ago, a system of short courses of instruction which are calculated to afford traders and their assistants such technical knowledge as may be of use to them in the actual conduct of their business. Such classes were held during the past season in the following towns:—New Ross, Athlone, Ennis, and Letterkenny, and were in each case well attended.

The Department will be pleased to arrange for similar courses of instruction in any town in which the traders desire to attend them. The classes occupy only a few hours each day for about a week, and the instruction given includes the following points:—

Fertilisers.—Description of the principal manures.—Value of (1) Nitrogen, (2) Phosphates, (3) Potash. Valuation of compound manures by unit method.—Manures suited for the various farm crops.—Making up mixtures to certain analyses.—Manures not to be mixed.—Manures of good keeping qualities and manures which deteriorate. Application of Fertilisers and Feeding Stuffs Act to sale of manures.—

Giving of invoices.—Correct and misleading methods of stating analyses.

Feeding Stuffs.—Composition of the principal cattle foods.—Comparative valuation of different food-stuffs by determination of total food units. Examination of cakes and meals for impurities and adulterants.—Compound cakes.—Home-grown food-stuffs.—Application of Fertilisers and Feeding Stuffs Act to sale of feeding stuffs.—Invoices.

Seeds.—Properties of good seeds.—Effect of age on seeds.—Comparison of fresh and old seeds.—Heavy and light seeds.—Identification of the more important grass seeds.—Identification of principal impurities and adulterants.—Method of testing.—Germination tests.—Ascertaining true value of samples from percentages of purity and germination.—Department's method of testing compared with that adopted at Continental stations.—Weeds and Agricultural Seeds (Ireland) Act.

II.—INVOICES.

The requirements of the Fertilisers and Feeding Stuffs Act dealing with the giving of invoices appeared to be generally complied with. In the exceptions which came under notice the Department ascertained that the failure to comply with the statutory requirements was due either to error on the part of the vendor or to a lack of knowledge as to his obligations under the Act. In these latter circumstances the official sampler in the district was directed to call on the vendor and explain the nature of the requirements of the section of the Act dealing with the matter. In two cases which came under their notice the Department were not satisfied that the failure on the part of the traders concerned was due to ignorance of the obligations of the Act and proceedings were therefore instituted. The facts in these cases were as follows :—

Towards the end of last year a farmer residing close to a small town in the South sent one of his employés to purchase one cwt. of cotton cake. On that occasion the vendor's assistant refused to furnish any bill or invoice, on the ground that he was too busy. Later on, the purchaser, being dissatisfied with the quality of the cake supplied, again applied for an invoice, making it clear to the vendor that he required a proper invoice in order to have a sample of the cake, which he believed to be inferior, analysed. He was then furnished with a document which did not, however, contain any reference to the percentage content of oil and albuminoids in the cake. As it appeared that the reluctance of the vendor to supply an invoice in proper form was due to the fact that the cake was of inferior quality, the Department instructed their official sampler to take samples for purposes of prosecution. A sample was submitted to the Chief Agricultural Analyst, who reported that the cake was made of inferior cottonseed meal and was in a very dirty and stale condition. On the hearing of the case, the magistrate decided that a serious offence had been committed, and imposed a fine of £4 with £1 costs.

In the second instance the failure on the part of a trader in the North to supply invoices in proper form was from time to time brought under the notice of the Department. Though the Department wrote specially to the trader in question pointing out his obligations in the matter, no improvement was effected, as he omitted to give such invoices on many subsequent occasions. A prosecution was accordingly instituted, and while the magistrates took a serious view of the offence, they decided, owing to the case being the first in that part of the country, to inflict only a nominal penalty of 5*s.* and costs.

III.—FERTILISERS.

Memorandum No. 4, containing the unit prices for the comparison of the commercial values of the various manures, was re-issued in January last (see Appendices, page 30). Owing to the continued advance last year in the prices of nitrogenous materials, it was found necessary to advance the value of nitrogen to 16*s.* per unit, being an increase of 1*s.* over the previous year. The unit prices of the other constituents remained unchanged.

Analysis of Samples.

The Department's Analytical Laboratory was reorganised during the year and equipped with additional apparatus to enable a much larger number of samples to be handled annually, but, owing to the disarrangement caused by the reorganisation, it was found necessary to curtail to some extent the number of samples of fertilisers and feeding stuffs ordinarily submitted for analysis.

One hundred and fifty-eight samples of fertilisers were tested during the year. Invoices and full particulars in regard to the consignments from which they were taken were given in the case of 115 samples. Of these 115 samples 71 (62 per cent.) were found to be up to the stated guarantee; 28 (24 per cent.) were found to be deficient within the limits of error allowed under the Fertilisers and Feeding Stuffs Regulations, 1910; and 16 (14 per cent.) were found to be deficient beyond these limits. A selection representative of the various manures tested, with the results of analysis in each case, is given at page 37 of the Appendices.

The Department are pleased to be able to state that, viewed as a whole, the manure trade appears to be in a satisfactory condition at present. In regard to the figures just quoted, it is to be pointed out that in sampling and analysing preference is given to cases of manures of doubtful quality. Owing to the necessity for restricting the number of samples to be tested the proportion of the total analysed this year, which consisted of manures of doubtful quality, was higher than last year. From inquiries made throughout the country, the Department believe that farmers are now more generally confining their purchases to the products of firms of repute. There has been a gratifying increase in the demand for mixtures made up in accordance with the formulæ (see page 35 of the Appendices) recommended by the Department for the various farm crops, and for the materials from which these mixtures may be prepared at home. There is now scarcely a town in Ireland in which superphosphate, sulphate of ammonia, kainit, muriate, and sulphate of potash cannot be procured for this purpose.

Basic Slag.—With the exception of a few lots of slag of a low content of citric soluble phosphates, the slags used were generally of the higher grades, containing 28 per cent. to 34 per cent. of citric soluble phosphates, and 34 per cent. to 42 per cent. total phosphates. In one instance, a trader in a southern town, who had little knowledge of the comparative values of the various grades of this material, placed an order for a quantity of a low-grade slag which he said had been represented to him by an agent as the best value on the market. On learning the true value of the slag from an official sampler who called on him, he refused delivery on the ground of misrepresentation. After a lengthy correspondence the agent eventually withdrew the consignment.

The Department have reason to suspect that it is a practice with a few traders to supply to purchasers who ask for slag of 34 per cent. citric solubility an article of a lower citric solubility unaccompanied by any invoice. This practice would be rendered impossible if purchasers would rigidly insist on being supplied with a proper invoice. In one case a farmer who had some reason to suspect that he had not been supplied with the 34 per cent. citric soluble slag, which he had ordered and paid for, returned to the trader concerned and pressed for an invoice. He was thereupon supplied with an invoice for 28 per cent. slag, the trader explaining that a mistake had been made and agreeing to refund the difference in price. Other somewhat similar instances have occurred in which, owing to the delay in the matter being brought under the Department's notice, action could not be taken.

Simple Manures.—Samples of the simple manures such as superphosphate, nitrate of soda, sulphate of ammonia, kainit, muriate, and sulphate of potash were examined. In all cases the samples were found to be up to guarantee and of good quality.

Low-grade Compound Manures.

Reference has been made in previous reports to the sale in this country by travelling agents of worthless manures (variously styled "Blood and Bone Compound," "Blood, Bone and Meat

Compound") on behalf of certain cross-channel firms. The Department are glad to report that no similar sales came under their notice during the past season, the firms engaged in this trade having apparently ceased to push their products in this country.

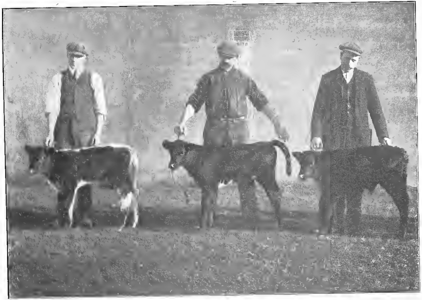
As mentioned in last year's report, the Department have made the closest inquiries into the business methods of the firms responsible for this trade; they have had field experiments conducted and, in recent cases where farmers, who had been deluded into buying worthless materials and who had declined to pay for them, were proceeded against for the amounts due, the Department have deemed it their duty to lay before the Court all the facts in their possession with regard to these firms. The following account of one of these cases may be found of interest:—

The firm in question, whose headquarters are in Liverpool, first came under the Department's notice early in 1909, when the Agricultural Instructor in county Monaghan reported that a travelling agent employed by them had visited his county and secured a considerable number of orders for one of their compounds called "No. 2 Blood and Bone Manure." Orders were in most cases secured by misrepresentation on the part of the agent, who made numerous false statements as to the value of the stuff and as to its use by certain prominent agriculturists in the neighbourhood. The farmers concerned held a meeting at which they resolved to refuse payment for the manure. A director of the firm then interviewed the Department in the matter and subsequently proceeded to county Monaghan where he met the farmers. He admitted misrepresentation on his agent's part, and agreed to accept a much lower price than that originally demanded. Some of the farmers agreed to this, but others declined to accept the stuff at any price. Those who used the manure suffered a serious loss of crop and eventually declined to pay anything for it. Though they have repeatedly threatened proceedings, the firm have not so far taken any steps in that district to recover payment. An effort which the firm made to get a foothold in the neighbouring county, viz., Armagh, was equally unsuccessful. Experiments, fully described in the Report of Proceedings for the year 1909–10, which were subsequently conducted by the Instructor in county Monaghan, demonstrated clearly the useless nature of the material as a fertiliser.

After the ill-success in the counties mentioned, the company transferred their operations to a remote district in County Mayo, where they employed a local agent, who induced a considerable number of poor farmers and cottagers to place orders, mostly averaging about two cwt. each, for different compounds. At harvest time the purchasers found out that their crops, wherever they had used the manures supplied alone, that is, without any dressing of farmyard manure, were failures, and

CALF FEEDING EXPERIMENT.

Photograph taken at Commencement of Experiment.



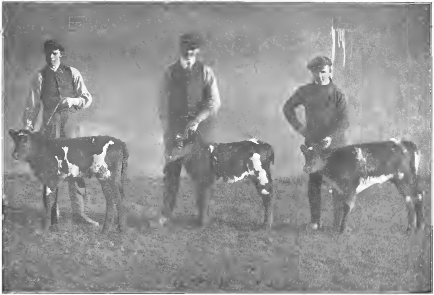
Calf. No. 1. Calf No. 2. Calf No. 3.

(Afterwards Fed on "Milk Food.")

See pages 16–18.

CALF FEEDING EXPERIMENT.

Photograph taken at Commencement of Experiment.



Calf No. 1. Calf No. 2. Calf No. 3.

(Afterwards Fed on Home-made Meal.)
See pages 16–18.

they accordingly declined payment. The Department, who had in the meantime fully investigated the matter, felt justified, in view of the serious losses which the purchasers had sustained, in volunteering to afford them assistance in the nature of expert evidence in the event of their being sued for payment. The company's repeated threats of proceedings did not materialise until the November quarter sessions of 1911, when eleven small farmers were served with civil bills for various amounts. On the hearing of the cases, at which officials of the Department gave evidence, the processes were dismissed, and costs amounting to £15 awarded. Appeals were entered by the company, but were subsequently withdrawn.

In the course of their investigations into the operations of this firm, the Department ascertained that their "manufacturing" premises in Liverpool consisted of a small warehouse which appeared to be shared by another tenant. Nevertheless the stationery of the firm displayed an elaborate array of chimney stacks and buildings and a list of about a dozen preparations such as fertilisers, weed-killers, antipests, etc., all of which were apparently intended to impress farmers. Some of the advertising matter issued contained numerous testimonials as to the excellence of certain of this firm's products. When a number of these testimonials purporting to be signed by Irish farmers were inquired into, the alleged signatories denied having written or having given authority to anyone to write the testimonials given.

The manures offered for sale in county Mayo were of no less than nine different varieties, called "Blood and Bone Compound," "Special Guano Compound," "Potato Manure," etc. Four of these, described in various terms as "Bone Compounds," were stated to consist largely of blood, bone, meat and other animal matter, and were generally recommended by the vendors as first-class complete fertilisers for "grass, clover, corn, potatoes, mangels, swedes, turnips and other roots." On analytical examination they were found to be principally composed of worthless materials to which a little blood and bone had been added, apparently to justify the title. The remaining five compounds, while possessed of some manurial value, were of low grade and did not agree in composition with any of those mixtures which experiment has shown to be suitable for the different farm crops. The prices charged in every case were most exorbitant.

Further efforts of this company to establish themselves in one of the midland counties came under the Department's observation at the same time. Here also the purchasers quickly ascertained that the manures which they had ordered were unsuitable and useless for growing crops. They declined to make payment, and though proceedings have been repeatedly threatened they have not been taken.

ILL-BALANCED COMPOUND MANURES.

While the Department believe that the trade in worthless mixtures such as those referred to above has now practically ceased, they regret to report that there are still effected sales of manures which, though of some fertilising value, are expensive and ill-balanced in composition. The use of these manures may, to a limited extent, increase the crop yield, but they do not give the good results which can be obtained from the use of manures which cost the same and which are made from the best materials and contain the proportionate amounts of fertilising ingredients which experiments in the field have shown to be necessary for the proper cultivation of the ordinary farm crops. If the composition of such manures as these is compared side by side with that of the mixtures recommended by the Department for the various crops agriculturists would easily perceive their unsuitability. The use of the Department's Memorandum on the Valuation of Manures would also readily show the excessive cost of such compounds.

In one district in which sales of a manure of this description were made during the spring, the Department arranged for a few comparative trials. The manure selected was that sold as "Special Potato Manure," and this was tested against an equal money value of a locally purchased manure made up as recommended by the Department for potatoes. The trials were conducted at two centres—the first with the Champion variety of potato, the second with a variety known in the district as "Irish Whites." The following table gives the results in brief:—

COMPOSITION OF MANURES USED.

	Soluble Phosphate	Nitrogen	Potash
D.A.T.I. Mixture ..	23%	3·25%	8%
Special Potato Manure ..	10%	3·3%	3%

RESULTS OF TEST No. 1.

Plot	Manuring Applied	Result per Statute Acre		
		T.	C.	Q.
A.	No Manure	3	0	1
B.	D.A.T.I. Mixture (8 cwt. per acre) . .	8	2	2
C.	Special Potato Manure (7½ cwt. per acre) .	6	5	1
D.	Dung	4	7	0
E.	Dung and D.A.T.I. Mixture (5 cwt. per acre) .	8	9	2
F.	Dung and Special Potato Manure (4¾ cwt. per acre)	6	7	2

RESULTS OF TEST No. 2.

Plot	Manuring Applied	Result per Statute Acre		
		T.	C.	Q.
A.	No Manure	3	0	2
B.	D.A.T.I. Mixture (8 cwt. per acre)	9	16	0
C.	Special Potato Manure (7½ cwt. per acre)	6	0	1
D.	Dung	5	16	0
E.	Dung and D.A.T.I. Mixture (5 cwt. per acre)	9	1	2
F.	Dung and Special Potato Manure (4¾ cwt. per acre)	7	8	2

In the first series of experiments, by using equal money values of the two manures under similar conditions, that recommended by the Department gave an increase over the Special Potato Manure used of 1 ton 17 cwts. 1 qr. per statute acre in the plots in which no farmyard manure was used, and of 2 tons 2 cwts. when applied with farmyard manure.

In the second series, conducted at a different farm and with a different variety of potato, the increases were 3 tons 16 cwts. and 1 ton 13 cwts., respectively, in favour of the Department's mixture.

The results of these tests, which were simply carried out as demonstrations for the information of farmers in one district, sufficiently indicate the importance of studying carefully the guaranteed composition of manures such as the above before purchase. Even if sold at a price approximating to their commercial value as ascertained by using the Department's scale of unit values, the use of many of these manures, owing to their ill-balanced nature, would still be uneconomic, though without a comparative trial the real loss sustained by their use would not be readily apparent.

The safe rule for all farmers to follow with compound manures is this: Use only manures made up according to the Department's formulæ, as set forth in the Appendices, page 35, and insist on being supplied with them. If in very special circumstances some modifications of the mixtures as recommended by the Department is considered necessary consult the County Agricultural Instructor.

IV.—FEEDING STUFFS.

ANALYSIS OF SAMPLES.

For the reason mentioned earlier in the report the Department were compelled to limit somewhat the number of analyses of feeding stuffs made during the past season. The total number of samples received during the year amounted to 297, of which 156 were tested. Invoices and full particulars were supplied in the case of 98 of the 156 samples tested. The results of analysis showed that 21 (21·4 per cent.) were up to guarantee, 51 (52 per cent.) were found to be deficient within the limits of error allowed under the Fertilisers and Feeding Stuffs Regulations, and 26 (26·6 per cent.) were found to be deficient beyond these limits. These figures, however, must not be taken as being an accurate index of the state of the trade in feeding stuffs, as even to a greater extent than in previous years the Department devoted more attention to foods which were suspected of being of an inferior nature. A selection representative of the feeding stuffs tested will be found at page 40.

Feeding Cakes.

Compound Cakes.—While the manure trade in this country shows marked improvement, the Department regret that the same cannot yet be said in regard to feeding stuffs. Though there is a continued increase in the demand for good quality linseed and cotton-seed cakes, there are still sold quantities of compound cakes described as "fattening," "feeding," "dairy," etc., which are in many cases unsuitable food-stuffs. In this connection, it should be remembered that the guaranteed analysis of a feeding stuff is not by any means as reliable a guide to its value as in the case of a manure. In respect of the latter, analysis can determine readily whether the fertilising ingredients are present in the required quantity and whether they are in an available form. A cursory examination will also show whether a manure is in an easily sowable condition. But, in the case of a feeding stuff, a mere test for the quantity of oil and albuminoids present is not of the same value. A microscopical examination may be and often is required to ascertain whether the ingredients used are pure, sound, and wholesome. The quality of the cake is further governed by its freshness and condition. Many compound cakes examined by the Department, not only in this but in previous years, have been found to be unsatisfactory for feeding purposes. In most cases they were made of stale and damaged materials. As numbers of these cakes contain warehouse sweepings of various descriptions, screenings, inferior rice and linseed meals, etc., their keeping qualities are sometimes very bad. Numerous samples examined contained mites and maggots.

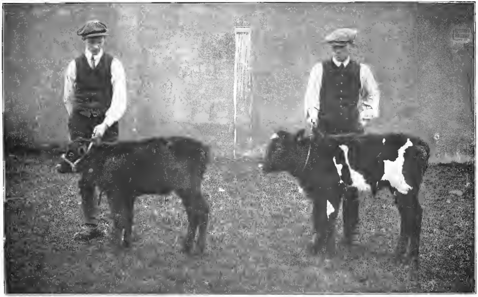
Linseed Cakes.—The samples examined during the year were satisfactory.

Cotton Cakes.—The samples of decorticated cotton cake tested were found to be up to a good standard. One sample of undecorticated cake came under notice which had become strongly overheated and was, in the Department's estimation, unfit for feeding purposes. They accordingly communicated with the retail vendors, who immediately returned the consignment to their wholesale suppliers.

A few cases were reported in which it was alleged that the feeding of cotton cake to cattle had been followed by injurious

CALF FEEDING EXPERIMENT.

Photograph taken at Conclusion of Experiment.



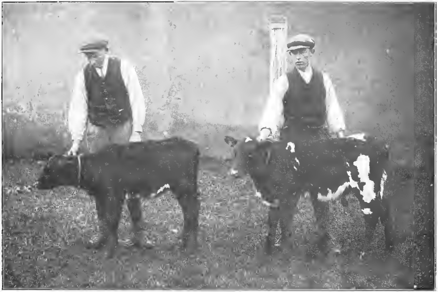
Calf No. 3.—Lot. I.
Fed on "Milk Food."

Calf No. 1.—Lot II.
Fed on Home-made Meal.

See pages 16-18.

CALF FEEDING EXPERIMENT.

Photograph taken at Conclusion of Experiment.



Calf No. 2.—Lot I.
Fed on "Milk Food."

Calf No. 2.—Lot II.
Fed on Home-made Meal.

See pages 16–18.

results. On examination of these particular cakes, the Department's Analyst failed to verify the presence of any foreign materials in them which would have had such injurious effects.

Calf Meals.

From time to time, through the medium of the Agricultural Instructors and by other means, the Department have issued numerous warnings to farmers against the use of certain high-priced calf meals which are composed of materials quite unsuitable for the feeding of young animals. They have urged on farmers the desirability of using along with separated milk none but calf meals of the best quality made from wholesome materials, such as that prepared in accordance with the formula recommended by the Department. Reports received go to show that these warnings are having the desired effect, as there is a general diminution in the trade of numbers of proprietary meals which have hitherto met with a ready sale in this country. The Department are glad to note that their efforts in exposing the operations of some of the firms engaged in this trade have resulted in inducing farmers to exercise more caution in the purchase of ready-made calf meals. In a few instances which came under notice, the suspicion of ready-made calf meals has become so strong in certain districts that farmers have refused to purchase even the meals prepared as recommended by the Department, simply because they were offered for sale made up ready for use. Crushed flaxseed, linseed cake meals, Indian meal and home-made oat and wheat meals are being more largely used in calf-rearing.

A better idea of the real value as calf meals of numerous of the proprietary articles sold for this purpose may perhaps be gained from a perusal of the following reports received from the Department's Analyst on his examination of samples during the year :—

Sample No. 1. (24*s*. per cwt.)	Composed of finely ground seeds of the leguminous order. At an outside valuation it is worth 10*s*. per cwt.
Sample No. 3. (17*s*. per cwt.)	Largely composed of ground rice and rice bran. Also present linseed cake and cottonseed meals and a considerable number of mites. *Not a suitable calf food.*
Sample No. 64. (22*s*. per cwt.)	Contains linseed cake meal, sugar, rice, cottonseed and traces of oatmeal, oat shudes, weed seeds. *Not a suitable calf food.*
Sample No. 90. (8*s*. per cwt.)	A bad sample, composed of oat shudes, rice meal and weed seeds. Large numbers of mites present. *Not a suitable calf food.*
Sample No. 93. (15*s*. per cwt.)	Chiefly composed of cottonseed meal, locust bean, rice meal, lentils and maize. Contains large numbers of mites. *Not a suitable calf food.*

Sample No. 124. (14*s.* per cwt.)	Composed of rice meal, linseed cake meal and leguminous seeds. Contains an excess of sand.
Sample No. 134. (12*s.* per cwt.)	Composed of rice meal, linseed cake meal, lentils, locust bean. Contains a large number of mites. *Not a suitable calf food.*
Sample No. 141. (21*s.* per cwt.)	Chiefly composed of linseed cake meal, rice meal and lentils, a little locust bean present. Stale, and containing mites. *Not a suitable calf food.*

A consideration of these reports will show that in the majority of cases the ingredients used in these meals are not suited for purposes of calf-rearing. Cottonseed meal should not be fed to young calves. It must also be remembered that linseed cake meal, when it is used, is generally of inferior quality. Even where the ingredients used were of the best quality the prices charged in nearly every case were far in excess of the real value of the meals.

The above, however, indicates sufficiently the importance of agriculturists consulting their Agricultural Instructors before placing orders for meals or other feeding stuffs of which they have not had previous experience.

CALF-FEEDING EXPERIMENT.

Under the sub-head "Low-grade manures" above, a certain Liverpool firm was mentioned as having disposed of worthless manures in a western district. As it was found that this firm also sold extensively in the same localities a calf-meal which they designated "Milk Food for Calves" and for which their travelling agents claimed, amongst other things, that it was a perfect substitute for milk—that calves could be successfully reared on it, without milk—the Department considered it an opportune occasion to bring home to farmers in a practical manner the real difference between a good calf meal and an inferior article. They therefore decided to undertake an experiment to test the value of the "Milk Food" as against the meal made up according to the Department's recommendation.

The "Milk Food" was submitted for analysis and found to contain :—

Oil ..	.. 10·44 per cent.
Albuminoids	.. 16·18 per cent.

The mixture recommended by the Department was prepared by mixing—

2 parts by weight of oatmeal.
2 " " maize meal.
1 " " pure ground flax seed,

and on analysis contained—

Oil ..	.. 11·60 per cent.
Albuminoids	.. 15·20 per cent.

For the purpose of the experiment, six young calves as nearly alike in age and type as possible were purchased in the Dublin Cattle Market and sent on the 17th January last to the Agricultural Station, Athenry, where they were weighed and examined by a veterinary surgeon, who certified that all were perfectly healthy and suitable for purposes of experiment.

For the first twelve days all the calves were fed alike on whole milk, after which they were divided into two lots of three each.

For the third week Lot I. were fed on half whole milk and half "Milk Food." After the third week the milk was discontinued and they were fed on the "Milk Food," in accordance with the directions of the makers as set out in their printed pamphlets.

For the third week Lot II. were fed on whole milk. Afterwards this was gradually replaced by separated milk and the home-made meal recommended by the Department, particulars of which are given above. At the end of the fifth week the new milk was discontinued, and the calves were fed on separated milk and home-made meal. Hay *ad lib.* was supplied to both lots.

There was kept in respect of each lot an accurate record of the quantity and cost of the food consumed and of the weights of the calves at regular intervals. During the first twelve days when both lots were fed on whole milk the total increase in weight of each lot was as follows:—

Lot I. (afterwards fed on "Milk Food") ..	66 lbs.
Lot II. (afterwards fed on home-made meal) ..	66 lbs.

This indicates that both lots were fairly equal.

The comparative trials proper then commenced, and at the end of a further eight weeks the increases in weight made by the respective lots were:—

Lot I. (fed on "Milk Food")	13 lbs.
Lot II. (fed on home-made meal) ..	234 lbs.

The animals were at this stage again examined by a veterinary surgeon, who reported as follows:—

Lot I. "Milk Food" Calves.

No. 1. Unhealthy, thin, dull and depressed, eyes injected, coat dry and staring.
No. 2. Do.
No. 3. Emaciated, back humped, dull and depressed, coat dry and staring.

All three had the appearance of not digesting and assimilating their food.

Lot II. Home-made Meal Calves.

No. 1. Healthy and thriving.
No. 2. Do.
No. 3. Do.

It was originally intended to continue the experiment for a longer period, but at this stage it became evident from the very weak and depressed condition (due to malnutrition) of the calves in Lot I. that the further feeding of the "Milk Food" to them would be quickly followed by fatal effects. The experiment had therefore to be concluded and these three calves put back at once on whole milk and the home-made meal. The increase in weight made by Lot I. in the four weeks after the "Milk Food" amounted to 99 lbs., which shows that the animals began to thrive again immediately they received suitable feeding.

During the eight weeks the "Milk Food" was being used the cost of feeding Lot I. amounted to £2 19*s.* 3*d.* and the cost of feeding Lot II. to £3 3*s.* 6*d.* The cost per cwt. of live weight increase, therefore, works out at:—

Lot I. ("Milk Food")	..	£25	10	5
Lot II. (Home-made meal)	..	1	10	5

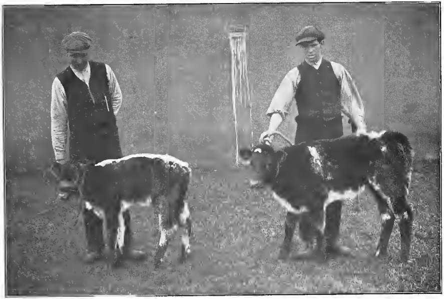
This latter statement of cost per cwt. of live weight increase assumes that Lot I. were equal value, cwt. for cwt., as Lot II. This, however, was not the case, as the No. I. Lot ("Milk Food") at the conclusion of the experiment were quite unsaleable.

MISCELLANEOUS FEEDING STUFFS.

Hop Food.—In last year's report reference was made to a prosecution instituted by the Department against a firm of hop-food manufacturers for selling to a farmer in county Cavan a feeding stuff described as hog-meal which had been found on analysis to be below guarantee in respect of content of oil and albuminoids. Early this year it came to the knowledge of the Department that the firm in question were extensively pushing the sales in one of the midland counties of their prepared "Hog" and "Dairy" meals. Samples of both of these, tested in the ordinary way, were found on analysis to be considerably below their stated composition. Steps were taken immediately to have official samples drawn from consignments, specially ordered for the purpose, of each of these meals. As both were again found to be seriously deficient in the guaranteed content of oil and albuminoids, the Department decided to institute proceedings, and the case was heard at the Southern Police Court, Dublin. For the defence it was maintained that the wording of the communication, in which the order was given for the consignments from which the official samples were drawn, was not sufficiently definite, and that accordingly the "Hog" and "Dairy" meals supplied to the purchaser were not the same as the "Hog" and "Dairy" meals separately mentioned on the invoice supplied. The Chief Magistrate stated that in view of the wording of the order he would not feel justified in convicting, and he accordingly dismissed both cases without costs.

CALF FEEDING EXPERIMENT.

Photograph taken at Conclusion of Experiment.



Calf No. 1.—Lot I.
Fed on "Milk Food."

Calf No. 3.—Lot II.
Fed on Home made Meal.

See pages 16–18.

V.—APPOINTMENT OF ANALYSTS.

Mr. J. Harold Totton, B.Sc., F.I.C., was re-appointed by the County Council of Londonderry temporarily for one year to the position of Agricultural Analyst for the County.

Mr. R. F. Blake, F.I.C., F.C.S., resigned his appointment as Agricultural Analyst to the Antrim County Council. The post has been filled by Mr. T. Hodgson, F.I.C.

VI.—SEEDS.

CONFERENCE OF SEED MERCHANTS, 1912.

The action to be taken by the Department in regard to the sale of inferior seeds in certain districts in 1911 has been a subject of serious consideration. Under the Act governing the sale of seeds, the only punitive power in regard to the sale of inferior seeds which the Department possess is that of publishing the names and addresses of the wholesale and retail suppliers. In one glaring instance which came under notice in 1911, the Department were compelled to exercise this power, but they did not consider it advisable to have general recourse to it pending the reorganisation of their Seed Testing Station, in order to enable it to deal adequately with the considerably increased amount of work entailed by the administration of this Act. To bring home to seed traders their responsibilities under the Act, the Department, in January last, convened a Conference which was attended by representatives of the leading wholesale and retail merchants doing business in Ireland. Prior to the opening of the Conference, the members were invited to inspect the Department's Seed Testing Station. The majority of the members availed themselves of this invitation, and all who did so expressed themselves as well satisfied with the methods for seed testing adopted and the care taken in carrying out each test.

The Conference was then opened by the Vice-President, after which the Assistant Secretary in respect of Agriculture, Mr. J. R. Campbell, read a paper reviewing briefly the present conditions of the supply of seeds to farmers, and the efforts of the Department to improve that supply.

Mr. Campbell pointed out that the Department were unwilling to proceed to the utmost exercise of their powers of publication under the Act until they had reorganised their seed testing station and made it equal, if not superior, to any in existence, and until they had had an opportunity of discussing personally with the merchants concerned the conditions of the trade and enlisting, as far as possible, their co-operation in stamping out the sale of all but good commercial seeds. The present opportunity was considered a suitable one, as it coincided with the transfer of the Department's Seed Testing Station to its present quarters, and its extension to cope more advantageously with its additional work. The Department's efforts to secure the adoption, as far as the Irish trade was concerned, of their methods of testing had been successful, and the misunderstanding which the difference between these methods and those in use at Continental Stations had aroused in the minds of those engaged in the seed trade had been removed.

He further stated that the Department recognised that a considerable degree of responsibility must rest at the doors of the farmers who persisted in purchasing seed whose only merit (and that a false one) was its cheapness, and while they realised that it was the business of the shopkeeper to supply his customers with what they demanded, and were prepared to pay for, they could not agree that it was therefore unfair to a trader to penalise him for simply having sold what he was asked for. A merchant who stocked seeds for sale was reasonably expected to have some special knowledge of their qualities, and where seeds were sold for sowing purposes, it was equally reasonable for the purchasers to expect to be supplied with seeds that would grow. The Department would not therefore be prepared, when a merchant's stocks were examined and found inferior, to accept as an answer the plea that in stocking bad seeds the merchant was simply preparing to meet a probable demand for them. Seed vendors who engaged in this class of trade were now warned of their liability, and if these warnings were neglected the Department would not hesitate to exercise their power under the Act.

On behalf of the seed trade, Mr. David Bell, President of the United Kingdom Seed Trade Association, stated that as far as his Association was concerned they would be glad to co-operate with the Department as far as possible in improving the conditions of the trade in agricultural seeds. He pointed out, however, for the consideration of the Department, some of the difficulties of the wholesale seed suppliers. The firms for which he spoke endeavoured, as far as possible, to supply only seeds of the highest quality. He gave instances to show that there was still a demand for seeds which he acknowledged were inferior, but which the wholesale merchant had to supply and incur the risk of having action taken against him by the Department, or else lose the order. (This point was very generally endorsed by other members of the Conference.) Seed merchants were compelled to meet this demand or let their business pass into other hands, as naturally buyers who wanted, say, grades of Perennial Rye Grass ranging from 28 lb. to 14 lb. bushel weight would not split their orders, and the firm who could not supply the lower weights would run the risk of losing the whole order. This state of affairs could alone be remedied by the better education of the farmer, and for this education the seed trader could only rely on the Department.

In concluding the Conference the Vice-President stated that the Department recognised the difficulties of the seed merchant as long as farmers continued to demand cheap and inferior seeds. The Department would not, in the present circumstances, depart from their usual procedure in the administration of other similar Acts, save in glaring instances of wrong-doing or extreme carelessness. They did not desire to administer the Act in any harsh spirit. Warnings, however, had already been given in certain cases, and the Department would not allow those warnings to be disregarded.

TESTING OF SAMPLES OF AGRICULTURAL SEEDS.

The number of samples submitted by official samplers during the year amounted to 2,342, being an increase of 560 as compared with the number for the previous year. Samples were taken in every county from the stocks of 762 wholesale and retail vendors. Of these samples 788, being an increase of 106 over the corresponding figures of last year, were selected for testing. Of the samples tested 540, or nearly 69 per cent., were found to be unsatisfactory in varying degrees for agricultural purposes.

It is difficult, however, from these figures to form an accurate idea of the general condition of the seed trade in this country, as before interpreting the above results due allowance must be made for the following considerations.

Broadly speaking, during the three years in which this Act has now been in operation, the Department's attention has been confined mainly to the sale of inferior seeds. Their official samplers have specific instructions to devote special attention to seeds which they do not consider to be of a good standard, and therefore in numerous cases the samples taken on a trader's premises are not entirely representative of all the grades he has in stock. (This fact, which has been made the subject of complaint at times by merchants, was also brought under the Department's notice at the Conference above mentioned.) Proportionately more samples of the doubtful seeds sold in any one district are taken than of the seeds which are known or appear to be of good quality.

Leaving this fact out of consideration for the moment, an approximate idea may be formed by comparing the number of samples which were actually found unsatisfactory on testing with the total number of samples received. On this basis the percentage of unsatisfactory samples works out at slightly over 23 per cent. But even this figure may be objected to on the ground that some deduction must be made in view of the fact mentioned above, that the total number of samples taken by the official samplers does not constitute on the whole an average index of the trade.

Provision of better accommodation for the Seed Testing Station not only enabled a greater number of samples to be dealt with, but also afforded much better facilities for the preliminary examination and selection of samples for testing, and there is good reason for believing that few, if any, of the samples not selected for testing last year would have been found unsatisfactory.

In choosing samples for testing, the following are the main points which are taken into consideration :—

1. Inferiority in the colour, size, plumpness, smell, etc., of the seeds.
2. The presence of obvious impurities.
3. The low bushel weight of the seeds.
4. The designation of the samples, e.g., "White Hay," "Blowings," "Cleanings," etc.
5. Price.
6. The age of the seeds (ascertained from the certificated particulars furnished with each sample).

Tables showing (*a*) the number of samples received, the number tested and found unsatisfactory, and the percentage of the number of samples received which proved unsatisfactory in respect of each county ; and (*b*) a summary of the germinations of all the samples tested under the Act, will be found at pages 43 and 44 of the Appendices.

In the following table will be found a classified list of the kinds of seeds and the number of samples of each of them tested, together with the number of each found to be unsatisfactory, and the respective average percentages of purity and germination of the unsatisfactory samples.

AVERAGES OF THE PERCENTAGES OF PURITY AND GERMINATION OF THE UNSATISFACTORY SAMPLES.

Name of Seed	No. tested	Unsatisfactory		
		No.	Average per cent. purity	Average per cent. germination
Barley	1	—	—	—
Perennial Rye	260	200	81·5	47
Italian Rye	174	139	92·1	50
Meadow Fescue	10	5	93·3	56
Meadow Foxtail	3	2	94·4	24
Timothy	41	7	95·1	40
Cocksfoot	19	9	84	56
Crested Dogstail	2	—	—	—
White Hay	30	30	71·9	23
Grass Seeds	6	4	80·1	39
Blowings	8	8	80·6	37
Holcus	2	2	48·5	37
Red Clover	107	47	80·1	47 & 4 hard
White Clover	55	42	57·3	52 & 35 ,,
Alsike Clover	40	30	86·2	53 & 8 ,,
Trefoil	12	9	93·4	48 & 3 ,,
Mangel	18	6	100	73

The following notes are extracted from a summary of the year's work submitted by the Head of the Department's Seed Testing Station :—

Grass Seeds.—A very large proportion of the unsatisfactory samples consists of the lower bushel-weights of Perennial and Italian rye grass seeds, together with mixtures sold under the names of White Hay, Brown Hay, Common Seed, Hay Seed, Mixed Grass Seeds, Holcus, "Blowings," etc. The average germination of the unsatisfactory samples of these latter classes of stuff reached only 34 per cent, while the purity averaged only 70 per cent. As a rule large quantities of weed seeds were present amongst the impurities.

Clovers.—Over one-half of the samples of the seeds of Clover and Trefoil tested were found to be inferior. The average germination of these inferior samples reached only 50 per cent. plus 12 per cent. hard seeds, and the average purity was but 81·5 per cent.

White Clover.—The purity of the samples of White Clover was particularly bad and a considerable number of samples of this seed were found to be adulterated with the cheaper seeds of Alsike Clover, varying in amount from over 4 up to as much as 20 per cent. by weight. In one case, where the sample was adulterated with 15 per cent. of Alsike Clover and where the germination was only 69 per cent. plus 11 per cent. hard seeds, the price was certified to be as high as 19*s*. 3*d*. per stone. In another case a sample adulterated with 8 per cent. of Alsike and having a purity of 87·3 per cent. germinated only 15 per cent. with 12 per cent. hard seeds, and was retailed at 1*s*. 4*d*. per lb. Another extremely bad sample of White Clover was sold at 10*d*. per lb., had a purity of only 55·2 per cent., contained maggots, and germinated only 4 per cent. plus 3 per cent. hard seeds. Still another extremely bad sample of this seed may be mentioned, which was offered at 1*s*. per lb. Its purity was 93·1 per cent., but it germinated only 7 per cent., with 9 per cent. hard seeds.

Red Clover.—As regards the samples of Red Clover tested, two, one of which was designated Foreign Red Clover, the other Cowgrass, were offered for sale at 10*d*. and 8*d*. per lb., respectively. Both consisted in reality of the cheaper seed of Trefoil. The latter sample was taken from a stock certified to have been purchased four or five years ago, and its germination was practically nil, being less than one per cent. Old seed of Red Clover was on sale in a Northern county, the purity of which was 99 per cent., but which germinated only 3 per cent. plus 6 per cent. hard seeds. Another sample of this kind of seed gave a purity of only 36·4 per cent., and a germination of 5 per cent. plus 1 per cent. hard seeds. From a western county a sample was received which gave a purity of 76·4 per cent. and a germination of 4 per cent. plus 3 per cent. hard seeds. Two other very bad samples may also be mentioned, viz., one in which the purity was 92·7 per cent. but the germination only 13 per cent. plus 2 per cent. hard seeds, and one having a purity of 96·1 per cent. and a germination of 13 per cent. plus 6 per cent. hard seeds. In this last case, new season's seeds had been mixed with his old stock by the retailer. A sample taken in the North contained over 23 per cent. by weight of dodder seeds, had a purity of only 61·2 per cent. and germinated 4 per cent. plus 5 per cent. hard seeds. A further sample from a southern county had a purity of 97·1 and germinated 63 per cent. plus 6 per cent. hard seeds. During the germination test of this seed a large number of maggots hatched out from the dead seeds.

Alsike Clover.—Many of the samples of Alsike Clover tested were very inferior both as regards purity and germination, but there were no such really bad samples of this seed as those of Red Clover mentioned above.

Trefoil.—Three-quarters of the samples of Trefoil tested were inferior. One sample taken from a bulk of ½ cwt. had a purity of 91·1 per cent., but germinated only 12 per cent. plus 1 per cent. hard seeds.

Meadow Fescue.—One sample of Meadow Fescue seed priced at 1*s.* 6*d.* per lb. was found to contain nothing but the much cheaper seed of Perennial Rye Grass.

Perennial Rye Grass.—Some of the samples of Perennial Rye Grass tested were extremely bad. Thus, of three samples taken in the North-west, two showed germinations of less than 1 per cent., or practically nil, while the third was only 2 per cent. The purity in the case of the first two was 44·8 per cent. and 49 per cent. respectively, and the third 73·2 per cent. Three samples with purities of 61·2 per cent., 53·1 per cent., and 51·7 per cent. gave germinations of 8 per cent., 5 per cent., and 10 per cent., respectively.

In a southern town a sample was obtained of seed supplied in 1911 which germinated 9 per cent. and was 21·4 per cent. pure, while in a neighbouring town a sample was taken of seed germinating 8 per cent. and being 64·8 per cent. pure. A sample taken in the North showed 13 per cent. germination and 79·6 per cent. purity. A sample from a consignment furnished to a southern retailer germinated 2 per cent. with a purity of 84·1 per cent.

Italian Rye Grass.—Amongst the samples of Italian Rye Grass there were not so many very inferior ones as in the case of the samples of Perennial Rye Grass just mentioned. In the North a sample was obtained which germinated only 7 per cent. and was 90 per cent. pure. From the South two samples were received which germinated 17 per cent. and 14 per cent. and had a purity of 78·8 per cent. and 78·9 per cent., respectively.

Timothy.—The proportion of exceptionally bad samples amongst those of Timothy which were tested was small; the two worst were one of old seed purchased by the retailer in 1910, selling at 12*s.* per stone, and having a germination of only 16 per cent. and a purity of 96·4 per cent., and one selling at 13*s.* per stone, having a germination of 7 per cent. and a purity of 88·8 per cent.

Cocksfoot.—There were no exceptionally bad samples of Cocksfoot amongst those tested, but the average germination of the unsatisfactory samples was very poor.

Mangel.—There were several inferior samples of Mangel seed. One, stated to be Yellow Globe Mangel, was found to consist of a mixture of yellow and red seed with the low germination of 32 per cent. The sample had been supplied to the vendor in 1911.

DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND,
AGRICULTURAL BRANCH,
April, 1913.

APPENDICES.

FERTILISERS AND FEEDING STUFFS ACT, 1906.

RETURN showing the names and addresses of the Agricultural Analysts under the above Act in each County and County Borough in Ireland, and giving particulars of arrangements existing in some Counties whereby farmers and other residents in the County can have samples of manures and feeding stuffs analysed at a reduced fee.

County.	Name and Address of Analyst.	Special rates which have been notified to the Department at which samples of manures and feeding stuffs are tested for residents in each county.
Antrim,	T. R. Hodgson, M.A., F.I.C., Poulten-le-Fylde, Lancashire.	Nil.
Armagh,	J. Harold Totton, B.Sc., F.I.C., 76 Scottish Temperance Buildings, Donegall Square, South, Belfast.	Fertilisers and feeding stuffs at 2/6 per sample.
Carlow,	Sir Charles A. Cameron, Castle Street, Dublin.	Fertilisers and feeding stuffs at 3/6 per sample.
Cavan,	Do., do., do.	Guano and superphosphate, 5/–; potash, 5/–; feeding stuffs, 5/– per sample.
Clare,	Do., do., do.	Nil.
Cork,	D. J. O'Mahony, F.C.S., City Hall, Cork.	„
Donegal,	Charles McMullan, F.I.C., 4 William Street Chambers, Belfast.	Fertilisers and feeding stuffs, 5/– per sample.
Down,	Sir Charles A. Cameron, Castle Street, Dublin.	Fertilisers, 2/6 per sample (2/6 extra for determination of potash); feeding stuffs, 2/6 per sample.
Dublin,	Do., do., do.	Nil.
Fermanagh,	Do., do., do.	Fertilisers and feeding stuffs, tested free.
Galway,	Do., do., do.	Nil.
Kerry,	D. J. O'Mahony, F.C.S., City Hall, Cork.	Fertilisers and feeding stuffs, 2/6 per sample.
Kildare,	Sir Charles A. Cameron, Castle Street, Dublin.	Do., do., do.
Kilkenny,	Do., do., do.	Nil.
King's,	D. J. O'Mahony, F.C.S., City Hall, Cork.	Fertilisers and feeding stuffs, 2/6 per sample.
Leitrim,	Sir Charles A. Cameron, Castle Street, Dublin.	Nil.
Limerick,	Do., do., do.	Fertilisers, 5/– (5/– extra for determination of potash); feeding stuffs, 5/– per sample.
Londonderry,	J. Harold Totton, B.Sc., F.I.C., 76 Scottish Temperance Buildings, Donegall Square, South, Belfast.	Fertilisers and feeding stuffs, 5/– per sample.

RETURN showing the names and addresses of the Agricultural Analysts under the above Act in each County and County Borough in Ireland, and giving particulars of arrangements existing in some Counties whereby farmers and other residents in the County can have samples of manures and feeding stuffs analysed at a reduced fee.—*continued.*

County.	Name and Address of Analyst.	Special rates which have been notified to the Department at which samples of manures and feeding stuffs are tested for residents in each county.
Longford,	Charles McMullen, F.I.C., 4, William Street Chambers, Belfast.	Superphosphates, 5/–; compound manures, 10/–; feeding stuffs, 7/6 per sample.
Louth,	Sir Charles A. Cameron, Castle Street, Dublin.	Fertilisers and feeding stuffs, 3/6 per sample.
Mayo,	Do., do., do.	Nil.
Meath,	Do., do., do.	Fertilisers and feedin gstuffs, 2/6 per sample.
Monaghan,	Do., do., do.,	Nil.
Queen's,	Do., do., do.	,,
Roscommon,	Do., do., do.	Fertilisers and feeding stuffs, 2/6 per sample.
Sligo,	Do., do., do.	Samples of fertilisers and feeding stuffs analysed free.
Tipperary (N.),	Do., do., do.	Fertilisers and feeding stuffs, 3/6 per sample.
Tipperary (S.),	Do., do., do.	Fertilisers and feeding stuffs, 12/6 per sample.
Tyrone,	Robert F. Blake, F.I.C., F.C.S., Scottish Provident Buildings, Donegall Square, W., Belfast.	Nil.
Waterford,	Sir Charles A. Cameron, Castle Street, Dublin.	Fertilisers and feeding stuffs, 2/6 per sample.
Westmeath,	Do., do., do.	Do., do., do.
Wexford,	Do., do., do.	Do., do., do.
Wicklow,	Do., do., do.	Do., do., do.
Co. Borough:		
Belfast,	J. Harold Totton, B.Sc., F.I.C., 76 Scottish Temperance Buildings, Donegall Street, South, Belfast.	Nil.
Cork,	D. J. O'Mahony, F.C.S., City Hall, Cork.	,,
Dublin,	Sir Chas. A. Cameron, Castle Street, Dublin.	,,
Limerick,	Do., do., do.	,,
Londonderry,	Professor Leebody, Magee College, Londonderry.	,,
Waterford,	Sir Chas. A. Cameron, Castle Street, Dublin.	Fertilisers and feeding stuffs, 2/6 per sample.

PARTICULARS of the names, addresses and occupations of the persons appointed by the Department to act as Official Samplers under the Fertilisers and Feeding Stuffs Act, 1906.

C. J. McCarthy, 4 Upper Merrion Street, Dublin,	Agricultural Inspector.	
J. Johnston, do., do.,	do.	
D. Twomey, do., do.,	do.	
J. Getty, do., do.,	do.	
J. W. Steen, do., do.,	do.	
J. L. Duncan, do., do.,	do.	
W. J. Megaw, do., do.,	do.	
P. McGovern, do., do.,	Junior Agricultural Inspector.	
J. M. Adams, Agricultural Station, Clonakilty,	Superintendent Agricultural Station.	
H. Kennedy, Munster Institute, Cork,	Farm Manager.	
P. Taylor, Stranorlar, Co. Donegal,	Agricultural Overseer.	
R. Y. Smith, O'Brien's Hotel, Galway,	do.	
D. S. Simpson, Prospect Avenue, Westport,	do.	
G. Doolan, 4 Upper Merrion Street, Dublin,	Horticultural Overseer.	
J. Marchbank, Carnheath, Carrickfergus,	Agricultural Instructor,	Co. Antrim.
P. T. O'Hare, 6 Lawnview Place, Ballymena,	do.,	do.
J. Bradshaw, The Cottage, Deansbridge, Armagh,	do.,	Co. Armagh.
J. Kelly, Pembroke Road, Carlow,	do.,	Co. Carlow.
J. Hanly, Erskine House, Cavan,	do.,	Co. Cavan.
D. Lucey, 77 Cathedral St., Ennis,	do.,	Co. Clare.
J. Mahony, Bonne View House, Kilkee,	do.,	do.
W. F. Prendergast, 4 Laurelwood, Douglas Rd., Cork,	do.,	Co. Cork.
A. O'Sullivan, Barrack St., Mallow,	do.,	do.
W. A. Pinkerton, 22 George Street, Clonakilty,	do.,	do.
C. C. Maguire, The Hotel, Newmarket,	do.,	do.
T. Ward, Gallagher's Hotel, Letterkenny,	do.,	Co. Donegal.
W. D. Davidson, 13 Ashley Av., Lisburn Avenue, Belfast,	do.,	Co. Down.
J. W. McKay, 31 Ormond Road, Rathmines,	do.,	Co. Dublin.
W. O. Smyth, 6 Willoughby Place, Enniskillen,	do.,	Co. Fermanagh.
T. Cotter, Athenry Hotel, Athenry,	do.,	Co. Galway.
N. Dromey, Private Hotel, Society Street, Ballinasloe,	do.,	do.
J. Scully, Main Street, Listowel,	do.,	Co. Kerry.
T. Wade, Glenville, Naas,	do.,	Co. Kildare.
J. Lucey, Greens Bridge, Kilkenny,	do.,	Co. Kilkenny.
J. Crowley, Cathedral Square, Waterford,	do.,	do.
D. T. Ritchie, Central Hotel, Tullamore,	do.,	King's Co.
J. J. O'Sullivan, Bantry Cottage, Manorhamilton,	do.,	Co. Leitrim.
T. Wibberley, Ballintemple Ho., Newcastle West,	do.,	Co. Limerick.
M. Gleeson, Cussen's Hotel, Kilmallock,	do.,	do.
D. R. Aiken, 6 Union Street, Coleraine,	do.,	Co. Londonderry.
W. L. Phair, Church Street, Longford,	do.,	Co. Longford.
T. J. Gallagher, Sunnyside, Dundalk,	do.,	Co. Louth.
J. O'Callaghan, Newtown, Castlebar,	do.,	Co. Mayo.
J. Duffy, Knox St., Ballina,	do.,	do.
N. Leitch, Scapemorris, Navan,	do.,	Co. Meath.
A. Carruth, Derryvalley House, Ballybay,	do.,	Co. Monaghan
D. Collins, 10 Market Square, Maryborough,	do.,	Queen's Co.
C. J. M'Carthy, Church Street, Roscommon,	do.,	Co. Roscommon.
P. Duffy, Courthouse, do.,	do.,	do.
R. W. Parker, William Street, Sligo,	do.,	Co. Sligo.
M. H. M'Donagh, 7 Castle St., Roscrea,	do.,	Co. Tipperary (N.R.)
C. O'Donovan, 7 Sarsfield Street, Clonmel,	do.,	Co. Tipperary (S.R.)
E. S. Daly, William St., Dungannon,	do.,	Co. Tyrone.
E. Gallaghor, 4 Campsie Terrace, Omagh,	do.,	do.
P. O'Keeffe, The Square, Dungarvan,	do.,	Co. Waterford
A. Scully, May Villa, Mullingar,	do.,	Co. Westmeath.
J. J. Brennan, Courthouse, Wexford,	do.,	Co. Wexford.
A. Nolan, Bay View Road, Wicklow,	do.,	Co. Wicklow.

Return showing the Number of Samples of Fertilisers, Feeding Stuffs and Seeds taken by the Agricultural Instructor for each County as Official Sampler during the year ended 30th September, 1912.

County.	Number of Samples Taken.		
	Fertilisers.	Feeding Stuffs.	Seeds.
Antrim,	4	2	98
Armagh,	9	6	35
Carlow,	5	3	24
Cavan,	22	24	26
Clare,	22	15	69
Cork,	23	27	153
Donegal,	0	0	0
Down,	1	0	29
Dublin,	3	2	31
Fermanagh,	3	2	23
Galway,	12	6	57
Kerry,	10	9	34
Kildare,	5	7	32
Kilkenny,	33	18	144
King's,	12	3	39
Leitrim,	0	0	0
Limerick,	10	5	15
Londonderry,	2	3	38
Longford,	5	0	33
Louth,	5	8	51
Mayo,	15	2	50
Meath,	2	2	50
Monaghan,	11	6	17
Queen's,	10	19	63
Roscommon,	31	5	34
Sligo,	4	0	39
Tipperary (N.R.),	15	8	51
,, (S.R.),	14	17	27
Tyrone,	8	4	69
Waterford,	3	8	53
Westmeath,	0	0	0
Wexford,	13	7	43
Wicklow,	10	1	48
Totals,	332	219	1,475

A. B. Memo, No. 4.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

AGRICULTURAL BRANCH.

VALUATION OF ARTIFICIAL MANURES, 1912.

The following Unit Prices have been fixed by the Department for use *in comparing* the approximate commercial values of manures this season :—

*Nitrogen	16/– per Unit.
Phosphates, soluble in water	1/10 ,,
†Phosphates, soluble in Citric Acid	1/4 ,,
‡Bone Phosphate	1/6 ,,
Potash	4/6 ,,

* The increased unit price for Nitrogen has been occasioned by the advance in cost of Sulphate of Ammonia. For every reduction of 20*s.* in the price per ton of Sulphate of Ammonia the unit price of Nitrogen may be taken as being reduced by 1*s.*

† The Unit Value of Citric Soluble Phosphate in Basic Slag is 1*s.* 9*d.*

‡ No allowance should be made for Insoluble Phosphates unless from Bone.

These Units are based on the present retail cash prices of manures of the highest class in Dublin and Belfast. When these units are multiplied by the respective percentages, if any, in the analysis of a manure, and 10*s.* is added for mixing, the result will represent very nearly the *cash price* of one ton of the manure free on rail at Dublin or Belfast. To ascertain the corresponding price at any other place in Ireland, add the amount shown in the list.

No one need pay more than these prices, and, in some instances, manures can be bought at something less ; especially is this the case where farmers combine to bulk their orders, or where they buy the ingredients and mix for themselves.

The Department desire to point out that the above prices should not be applied to low grade manures which may be composed of waste organic substances and of phosphates in a form not readily available by plants. Such compounds are often of little, if any, agricultural value, and can be produced at a low cost compared with manures compounded from first-class materials like sulphate of ammonia, superphosphate, and the well-known potash salts of proved merit.

STATEMENT showing the amount which must be added to the Price of Manures in Dublin or Belfast to represent the cost of the same Manures at the following places when purchased from a local merchant or in quantity direct from the manufacturers :—

A.	Per Ton.
Abbeydorney	8/9
Abbeyfeale	11/–
Abbeyleix	7/9
Achill	10/9
Adare	9/–
Adoon	10/3
Aghada	3/9
Aghadowey	5/3
Aghalee	3/9
Aldergrove	4/3
Annaghmore	5/–
Antrim	3/9
Ardagh	9/9
Ardara Road	10/9
Ardee	4/6
Ardfert	8/3
Ardglass	5/–
Ardrahan	10/9
Ardsollus	10/3
Arigna	10/9
Arklow	5/–
Armagh	5/3
Armoy	6/6
Arva Road	8/6
Askeaton	9/–
Athboy	5/6
Athenry	8/9
Athlone	7/–
Athy	5/6
Attanagh	7/9
Attymon	9/9
Augher	8/–
Aughnacloy	7/6
Aughrim (Wicklow)	4/9
Aunascaul	10/6
Aylwardstown	3/3
B.	
Bagnalstown	7/9
Balbriggan	4/–
Balla	9/9
Ballaghadereen	10/3
Ballina	6/3
Ballynahinch (Co. Galway).	12/–
Ballinamallard	8/6
Ballinamore	10/9
Ballinamore (Donegal).	8/6
Ballinascarthy	6/–
Ballinasloe	8/–
Ballinass	7/6
Ballincollig	3/–
Ballinderry	3/3
Ballindine	10/9
Ballindrait	4/9
Ballineen	6/–
Ballinglen	5/6
Ballingrane	9/3
Ballinhassig	3/3
Ballinlough	10/3
Ballinrobe	10/9
Ballintogher	9/–
Ballintra	8/9
Ballybay	7/–
Ballybeg	5/3
Ballybofey (Stranorlar).	7/6
Ballyboley	5/9
Ballybrophy	6/3
Ballybunion	11/3
Ballycar	9/9
Ballycarry	3/9
Ballycastle (Antrim)	6/3
Ballyclare	2/6
Ballyclare Junc.	3/–
Ballyconnell	9/6

	Per Ton.
Ballycullane	4/6
Ballycumber	7/3
Ballydehob	8/6
Ballyduff (Cork)	6/6
Ballygawley	7/9
Ballyglunin	10/–
Ballygowan	2/3
Ballyhack	3/9
Ballyhaise	8/6
Ballyhale	4/9
Ballyhaunis	10/3
Ballyhooley	6/3
Ballyhiffin	5/9
Ballymagan	4/6
Ballymagorry	4/–
Ballymartle	4/–
Ballymena	5/–
Ballymoe	9/9
Ballymoney	4/3
Ballymote	9/–
Ballynahinch (Co. Down).	4/–
Ballynahinch Junc. (Co. Down).	3/3
Ballynashee	7/3
Ballynoe	5/3
Ballynure	5/9
Ballyragget	7/6
Ballyroney	5/3
Ballyshannon	8/9
Ballysodare	7/3
Ballyvary	9/3
Ballyward	5/3
Ballywillan	7/9
Ballywilliam	5/6
Baltimore	8/9
Baltinglass	6/–
Banagher	7/9
Banbridge	4/3
Bandon	5/–
Bangor (Down)	2/6
Bansha	8/–
Banteer	6/6
Bantry	7/6
Barnagh	10/6
Batterstown	3/3
Bawnboy	10/9
Beauparc	4/–
Bective	4/9
Belcoo	12/–
Bellarena	5/–
Belleek	10/–
Bellurgan	5/3
Belmont	6/6
Belmullet	10/–
Belturbet	8/9
Bennetts Bridge	5/9
Beragh	7/3
Bessbrook	4/9
Birdhill	9/6
Blackrock (Cork)	3/3
Blackwatertown	5/6
Blarney	2/9
Blessington	3/3
Boher	8/9
Borris	7/–
Boyle	9/6
Bray	2/3
Bridge End	3/3
Bridgetown (Donegal)	8/9

	Per Ton.
Bridgetown (Wexford)	5/3
Brittas	2/9
Brookeboro'	9/–
Brookmount	2/9
Bruckless	10/6
Bruree	7/6
Bunbeg	7/6
Buncrana	4/3
Bundoran	10/–
Bundoran Junc.	8/3
Burnfoot	3/3
Burton Port	6/6
Bush	5/3
Buttevant	6/–

C.

Cahir	7/–
Cahirciveen	10/–
Caledon and Tynan	6/3
Camolin	5/–
Campile	3/3
Capecastle	7/–
Cappagh	6/9
Cappoquin	7/3
Caragh Lake	11/–
Carberry	5/3
Cargan	9/3
Carlingford	5/–
Carlow	7/–
Carndonagh	6/–
Carrickfergus	2/3
Carrichue	3/9
Carrickmacross	5/9
Carrickmore	7/3
Carrick-on-Shannon	8/6
Carrick-on-Suir	4/6
Carrigaline	3/9
Carrigaloe	4/–
Carrigans	4/–
Carrigrohane	2/9
Carrigtwohill	3/9
Carrolls Cross	4/3
Carrowen	4/–
Carrowmore	9/6
Cashel	9/6
Cashelnagore	6/6
Castlebar	8/6
Castlebellingham	4/9
Castleblayney	6/3
Castlecaldwell	9/9
Castleconnell	9/–
Castledawson	6/3
Castlederg	7/–
Castlefinn	5/–
Castlegregory	9/9
Castlegregory Junc.	9/–
Castlegrove	11/–
Castleisland	9/3
Castlemaine	10/–
Castlerea	9/9
Castlerock	4/9
Castletown	6/9
Castletownberehaven	8/9
Castletownroche	6/–
Castlewellan	5/3
Cavan	8/9
Celbridge	2/9
Chapel	4/6
Charlemont	5/3
Charlestown	11/–

	Per Ton.
Charleville	6/9
Church Cross	9/9
Church Hill	5/9
Clady	4/9
Clara	7/3
Clare Castle	8/9
Claremorris	10/9
Clashganny	6/–
Clifden	11/3
Cloghan	7/6
Clogher	8/3
Cloghroe	3/3
Clonakilty	6/3
Clonakilty Junc.	5/6
Clondulane	6/–
Clones	7/6
Clonmany	5/–
Clonmel	4/9
Clonsilla	1/9
Cloughjordan	8/–
Coachford	4/–
Coachford Junc.	3/–
Coagh (via Moneymore).	7/3
Coalisland	6/6
Colbinstown	5/6
Colebrook	9/–
Coleraine	2/6
Collooney	7/–
Comber	2/–
Convoy	5/6
Cookstown	7/3
Cookstown Junc.	4/9
Cootehill	7/9
Corbally	3/9
Corbet	4/9
Cork	1/3
Corofin	10/6
Courtmacsherry	5/–
Courtwood	5/3
Craigavad	2/–
Cratloe	9/6
Craughwell	10/–
Creeslough	6/6
Crew	7/6
Creighanroe	6/9
Crolly	6/6
Crookstown Road	4/3
Croom	8/–
Crossdoney	8/3
Crossgar	4/–
Crosshaven	4/3
Crossroads	8/9
Crumlin	4/–
Crusheen	11/3
Cullion	3/–
Culloville	5/6
Cullybackey	5/9
Culmore	1/3
Currabinny	4/3
Curry	10/6

D.

Dalkey	3/–
Delgany	3/3
Derryork	5/9
Dervock	5/9
Desert	5/9
Desertmartin	6/9
Devon Road	11/–

	Per Ton.
Dingle	8/9
Doagh	2/6
Donabate	3/-
Donaghadee	2/9
Donaghmore	6/3
Donamon	9/6
Donegal	7/6
Donemana	3/-
Donoughmore	4/-
Doonbeg	12/9
Dooniskey	4/9
Dooran Road	9/9
Downhill	5/-
Downpatrick	4/3
Draperstown	7/3
Drimoleague	7/6
Dripsey	3/9
Drogheda	1/3
Dromahair	9/-
Dromineer	7/3
Dromkeen	9/3
Dromod	8/3
Dromore (Down)	3/9
Dromore Road	7/9
Drumfries	5/-
Drumree	3/6
Drumshambo	10/9
Drumsna	9/-
Drumsurn	5/3
Duleek	3/9
Dunadry	3/9
Dunboyne	2/6
Duncannon	3/9
Duncormick	5/6
Dundalk or D'dalk Junc.	2/6
Dundrum (Down)	5/-
Dundrum (Dublin)	2/-
Dundrum (Tipp.)	9/-
Dunfanaghy	7/6
Dunfanaghy Road	6/6
Dungannon	5/9
Dungarvan	5/-
Dungiven	5/9
Dungloe Road	6/6
Dunkineely	9/3
Dunlavin	5/3
Dunleer	4/-
Dunloy	6/3
Dunmanway	6/9
Dunsandle	9/9
Durrow	5/6
Durrus Road	8/3
E.	
Edenderry	4/-
Edermine Ferry	4/6
Edgeworthstown	7/6
Eglinton	3/-
Embankment	1/6
Emly	8/3
Emyvale Road	7/-
Enfield	4/6
Ennis	8/9
Enniscorthy	2/6
Enniskillen	8/9
Ennistymon	12/6
F.	
Fahan	3/9
Falcarragh	6/6

	Per Ton.
Farranaleen	6/6
Farranfore	9/-
Farrangalway	4/6
Fenit	7/6
Ferbane	6/9
Fermoy	5/9
Ferns	3/9
Fethard	6/6
Fiddown	4/-
Fintona	7/-
Fintown	8/-
Firmount	4/-
Fivemiletown	8/6
Float	7/6
Florencecourt	16/9
Foxford	8/-
Foxhall	6/3
Fox's Bridge	3/9
Foynes	10/-
G.	
Galway	6/3
Garvagh	5/3
Geashill	7/-
Gibbstown	5/3
Glanworth	6/-
Glarryford	6/3
Glasslough	6/6
Glenavy	3/9
Glenbeigh	11/3
Glenealy	3/3
Glenfarne	11/6
Glengariffe	8/6
Glenmaquin	5/6
Glenmore	7/3
Glenties	8/6
Glin	11/3
Glynn	4/6
Goold's Cross	9/-
Goraghwood	4/6
Goresbridge	7/6
Gorey	4/9
Gormanstown	4/-
Gort	11/3
Gortatlea	8/9
Gowran	7/-
Graigus	5/6
Grange	3/9
Grange Con	5/9
Greencastle	1/3
Greenisland	2/6
Greenore	5/-
Greystones	3/3
Groomsport	3/-
Gweedore	6/6
H.	
Hamilton's Bawn	6/-
Harristown	4/6
Haulbowline	4/-
Hazelhatch	2/9
Headford Junc.	8/6
Headwood	7/3
Healy's Bridge	2/9
Helen's Bay	2/6
Hilden Siding	1/9
Hill of Down	5/6
Hillsborough	3/-
Hollyhill	10/-
Hollymount	11/-

	Per Ton.
Holywood	1/6
Horse and Jockey	7/3
Horselsap	7/3
Howth	2/9
I.	
Inch	5/3
Inch Road	3/3
Inniskeen	4/6
Inver	9/9
Irvinestown	8/6
J.	
Jordanstown	2/3
K.	
Kanturk	6/9
Katesbridge	5/-
Keady	6/3
Kells (Ballymena)	8/6
,, (Meath)	5/9
,, (Kerry)	13/-
Kellswater	5/-
Kenmare	7/3
Kesh	9/-
Kilbeggan	7/6
Kilcock	3/6
Kilcoe	16/3
Kilcool	3/3
Kilcrea	3/9
Kildare	5/-
Kildysart	16/6
Kilgarvan (Kerry)	9/6
Kilgarvan (Tipp.)	7/9
Kilkee	12/6
Kilkenny	6/3
Killagan	6/3
Killala	7/9
Killaloe	8/9
Killarney	9/-
Killeagh	5/3
Killeshandra	8/9
Killinick	4/9
Killorglin	10/-
Killough	5/-
Killucan	6/-
Kilumney	3/3
Killurin	4/6
Killybegs	8/9
Killygordon	5/9
Killylea	5/9
Kilmacow	3/3
Kilmacrennan	6/9
Kilmacthomas	4/6
Kilmainham Wood	6/3
Kilmallock	7/6
Kilmeaden	3/9
Kilmessan	4/3
Kilmorna	16/9
Kilmurry (Cork)	3/9
,, (Clare)	13/3
Kilrane	3/9
Kilrea	5/9
Kilroot	3/-
Kilrush	16/-
Kilsheelan	5/6
Kiltimagh	11/6
Kingscourt	6/6
Kinsale	5/-
Kinsale Junc.	4/-

	Per Ton.
Knockanally	6/9
Knockcroghery	9/–
Knocklong	8/–
Knockloughrim	6/9
Kylemore	8/–
L.	
Laffan's Bridge	7/–
Laghey	8/9
Lanesborough	8/–
Larne	4/3
Larne Harbour	4/6
Laurencetown	4/6
Laytown	3/9
Leighlinbridge	7/9
Leitrim	5/3
Leixlip	2/6
Letterkenny	5/6
Levittstown	6/–
Leyny	9/3
Limavady	4/6
,, Junc.	4/3
Limerick	6/3
,, Junc.	7/6
Lisbellaw	9/–
Lisburn	1/9
Liscooley	5/6
Lisduff	8/9
Liselton	13/3
Lismore	7/3
Lisnagry	9/–
Lisnaskea	8/6
Lispole	10/9
Listowel	10/3
Lixnaw	9/6
Lombardstown	6/–
Londonderry	1/3
Longford	8/–
Loo Bridge	9/–
Loughgilly	5/3
Loughmeala	10/–
Loughrea	10/–
Lowtown	4/3
Lucan	2/6
Lurgan	3/9
Lusk	3/3
Luska	7/3
M.	
Maam Cross	10/9
Macfin Junc.	4/6
Macmine Junc.	5/3
Macroom	5/3
Madore	8/3
Mageney	6/6
Maghera	7/3
Magherafelt	6/6
Magheramorne	4/3
Magilligan	5/3
Maguiresbridge	8/9
Malahide	2/–
Malin Head	5/–
Mallaranny	9/9
Mallow	5/6
Manorcunningham	5/–
Manorhamilton	10/9
Markethill	5/6
Maryboro'	6/3
Maynooth	3/–
Middleton	3/3

	Per Ton.
Middletown (Armagh)	5/9
Milford (Carlow)	7/3
,, (Donegal)	7/6
Millstreet	7/3
Milltown (Tuam)	10/6
Milltown-Malbay	13/6
Mitchelstown	6/9
Moate	7/6
Mogeely	4/6
Mohill	10/3
Moira	3/6
Molahiffe	9/6
Monaghan	6/3
Monaghan Road	7/6
Monasterevan	4/9
Moneymore	7/–
Monkstown (Cork)	3/9
Moorfields	8/–
Morley's Bridge	9/3
Mountain Stage	12/6
Mountcharles	8/3
Mountmellick	6/3
Mountrath	7/9
Mountshannon	9/9
Mourne Abbey	4/9
Moville	3/9
Moy	5/3
Moyasta	12/3
Moycullen	7/9
Muckamore	4/3
Mullafarnaghan	4/–
Mullinavat	3/9
Mullingar	6/3
Mulroy	7/6
Multyfarnham	6/9
N.	
Naas	3/6
Navan	4/–
Nenagh	7/3
Newbliss	8/–
Newbridge	4/3
Newbuildings	3/3
Newcastle (Down)	5/–
Newcastle West	10/–
Newcastle (Wicklow)	3/3
Newmarket (Cork)	7/3
Newport (Mayo)	7/9
Newport Trench	4/3
New Ross	2/6
Newry	2/6
Newtownards	2/–
Newtownbutler	8/3
Newtowncunningham	4/–
Newtownforbes	8/3
Newtownstewart	5/9
Nobber	6/–
O.	
O'Brien's Bridge	9/9
Oldcastle	7/–
Omagh	6/6
Omeath	5/3
Oola	9/–
Oranmore	7/6
Oughterard	9/3
Ovoca	4/3
P.	
Palace East	4/6

	Per Ton.
Pallas	9/3
Parkmore	8/–
Parsonstown	7/3
Passage West	3/9
Patrick's Well	8/6
Peake	4/–
Pettigo	9/3
Philipstown	5/9
Pluck	5/6
Pomeroy	6/9
Portadown	3/9
Portarlington	5/–
Porthall	4/–
Portrush	2/6
Portsalon	7/6
Portstewart	4/3
Portumna	8/3
Poulaphouca	4/–
Poyntzpass	5/3
Q.	
Queenstown	4/3
Queenstown Junc.	3/6
Quilty	13/6
Quin	10/3
R.	
Raffeen	3/9
Rahan	6/3
Ramelton	6/–
Randalstown	4/9
Raphoe	5/3
Rathangan	5/3
Rathdrum	3/–
Rathduff	4/–
Rathfriland	8/9
Rathkeale	9/6
Rathmore	8/–
Rathmullen	6/–
Rathnew	3/3
Rathvilly	6/3
Recess	11/6
Redhills	8/6
Retreat	9/9
Rhoda Bridge	4/–
Richhill	5/–
Ringaskiddy	4/–
Robertstown	4/3
Rochestown	3/3
Rockcorry	7/6
Rooskey	7/–
Roscommon	9/6
Roscrea	8/6
Ross	9/–
Rosslare	5/–
Rossmore	8/3
Rossnowlagh	10/–
Rush and Lusk	3/3
Rushbrook	4/–
S.	
St. Anne's	2/9
Saintfield	2/9
St. Johnston	3/3
St. Mullins	5/6
Sallins	3/6
Sallybrook	4/9
Scariff	9/6
Scarva	5/3
Schull	8/6
Shankill	2/6

	Per Ton.
Shannon Bridge	8/–
,, Harbour	6/6
Sbillelagh	6/–
Sion Mills	5/–
Sixmilebridge	9/6
Sixmilecross	7/6
Skerries	3/9
Skibbereen	8/3
Sligo	6/3
Smithborough	7/6
Sneam	8/9
Spa	8/6
Sparrowsland Sdg.	4/6
Staffordstown	5/6
Stewartstown	6/3
Strabane	3/3
Stranocum	6/–
Stranorlar	6/–
Streamstown	7/3
Swinford	11/6
T.	
Tallaght	1/–
Tallow Road	6/9
Tanderagee	4/6
Tarbert	10/–
Templemore	6/3
Templepatrick	3/9
The Lamb	2/9
Thomastown	5/6
Thurles	6/9
Timoleague	5/9
Tinahely	5/6
Tipperary	8/3
Toomebridge	5/9
Tower Bridge	2/9
Tralee	6/3
Tramore	2/9
Trew and Moy	5/6
Trillick	8/–
Trim	5/–
Tuam	10/6
Tubber	11/9
Tubbercurry	9/6
Tullamore	5/9
Tullow	7/–
Tullymurry	5/–
Tynan	6/3
U.	
Upperlands	7/3
Upton	4/–
V.	
Valentia Harbour	10/–
Vernersbridge	5/3
Vicarstown	6/–
Victoria Bridge	5/3
Virginia Road	6/6
W.	
Warrenpoint	4/3
Waterfall	3/3
Waterford	1/3
Wellington Bridge	5/–
Westport	6/3
Westport Quay	6/3
Wexford	2/6
Whiteabbey	2/–
Whitehead	3/6
Wicklow	1/3
Wilkinstown	5/6
Woodenbridge	4/9
Woodlawn	9/3
Y.	
Youghal	5/–

The following are examples showing how manures may be valued by means of the Unit Prices given in this leaflet :—

1. Suppose the manure is guaranteed to contain "3·25 per cent. Nitrogen, 23 per cent. Soluble Phosphates, 8 per cent. Potash," its value at Ballybay would be reckoned thus :—

			£	s.	d.
Nitrogen,	3·25 per cent.	@ 16/– per Unit,	= 2	12	0
Soluble Phosphates,	23 ,,	@ 1/10 ,,	= 2	2	2
Potash,	8 ,,	@ 4/6 ,,	= 1	16	0
Allowance for Mixing,			= 0	10	0
Special Allowance for Ballybay (see Statement)			= 0	7	0
Value per ton at Ballybay,			£7	7	2

2. Suppose the guaranteed analysis is "19 per cent. Soluble Phosphates, 1·5 per cent. Potash, 2·45 per cent. Nitrogen," the value of the manure at Tralee would be reckoned thus :—

			£	s.	d.
Soluble Phosphates,	19 per cent.	@ 1/10 per Unit	= 1	14	10
Potash,	1·5 ,,	@ 4/6 ,,	= 0	6	9
Nitrogen,	2·45 ,,	@ 16/– ,,	= 1	19	2
Allowance for Mixing,			= 0	10	0
Special Allowance for Tralee (see Statement)			= 0	6	3
Value per ton at Tralee			£4	17	0

Farmers are advised to consult their County Agricultural Instructor before buying any manure if they are in doubt as to its value; and, as far as possible, to use the manures recommended by the Department for the various crops. See Department's Memorandum A. B. No. 8.

January, 1912.

A. B. MEMO. No. 8.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

MEMORANDUM.

MANURES RECOMMENDED BY THE DEPARTMENT FOR THE VARIOUS FARM CROPS.

OATS OR BARLEY.

A mixture of :—

1 part of Sulphate of Ammonia 3 parts of Superphosphate (35%) 3 parts of Kainit	which forms a complete manure, having an analysis of	2·75% Nitrogen. 15·00% Soluble Phosphates. 5·00% Potash.

To be applied at the rate of 5 cwt. per statute acre.

POTATOES.

A mixture of :—

1 part of Sulphate of Ammonia 4 parts of Superphosphate (35%) 1 part of Muriate of Potash	which forms a complete manure, having an analysis of	3·25% Nitrogen. 23·00% Soluble Phosphates. 8·00% Potash.

To be applied at the rate of 5 cwt. per statute acre, along with 15 tons dung.

TURNIPS.

Where a fair quantity of dung of good quality is available it will usually be found sufficient to use along with it from 4 to 5 cwt. per statute acre of Superphosphate (35% Soluble Phosphates) or Basic Slag (34% Citric Soluble Phosphates).

Where the amount of dung is very limited the following mixture should be applied to this crop at the rate of 5 to 6 cwt. per statute acre :—

1 part of Sulphate of Ammonia 4 parts of Superphosphate (35%) 3 parts of Kainit	which forms a complete manure, having an analysis of	2·5% Nitrogen. 17·5% Soluble Phosphates. 4·5% Potash.

MEADOW HAY.

1 part of Nitrate of Soda.
2 parts of Superphosphate (35%).
2 parts of Kainit.

To be applied at the rate of 4 or 5 cwt. per statute acre.

The superphosphate and kainit comprised in the manure for meadow hay should be applied before the end of February. These two manures may be mixed together, but the mixture should then be sown without delay. The nitrate of soda should be applied separately, early in April.

January, 1912.

[POSTER.]

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

APPLY

BASIC SLAG

TO

PASTURES

EARLY.

REFUSE INFERIOR BRANDS.

READ LEAFLET No. 22.

To be had FREE on application to
The Secretary, Department of Agriculture and
Technical Instruction for Ireland,
Upper Merrion Street, Dublin.

[POSTER.]

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

CAUTION.

CALF MEALS.

FARMERS

ARE

WARNED

THAT

INFERIOR AND EXPENSIVE CALF MEALS

ARE AT PRESENT BEING

SOLD IN IRELAND.

READ LEAFLET No. 54.

To be obtained FREE on application to
The Secretary, Department of Agriculture and
Technical Instruction for Ireland,
Upper Merrion Street, Dublin.

Letters so addressed need not be stamped.

RETURN giving particulars of a representative selection of Fertilisers analysed by the Department during the year ended 30th September, 1912.

Description of Fertiliser and County in which sample was drawn.	G = Vendor's Guarantee. A = Result of Analysis.	Phosphates.				Nitrogen.	Potash.	P=Price charged per ton V=Commercial Value ,,				Observations.
		Total.	Water Soluble.	Citric Soluble.	Insoluble.				£	s.	d.	
Basic Slag.												
Carlow, . .	G	—	—	34	—	—	—	P	3	4	6	A good sample of a high grade slag.
	A	—	—	34·17	—	—	—	V	3	10	6	
Limerick, .	G	30	—	24	—	—	—	P	1	12	6	A lower grade slag seriously below guarantee.
	A	28·9	—	19·07	—	—	—	V	1	19	7	
Armagh, .	G	42	—	33·6	—	—	—	P	3	7	6	A good slag at a reasonable price.
	A	—	—	35·19	—	—	—	V	3	6	10	
King's, .	G	—	—	28	—	—	—	P	2	10	0	Medium-grade slag, price reasonable.
	A	—	—	28·48	—	—	—	V	2	9	10	
Mayo, . .	G	—	—	22	—	—	—	P	2	5	0	A low-grade sample.
	A	—	—	22·5	—	—	—	V	1	19	5	
Superphosphate.												
Louth, . .	G	—	35	—	—	—	—	P	3	3	9	A good sample at a reasonable price.
	A	—	37·4	—	—	—	—	V	3	11	1	
Tipperary, N.R.	G	—	35	—	—	—	—	P	3	8	0	Ditto.
	A	—	34·89	—	—	—	—	V	3	12	6	
Tipperary, N.R.	G	—	26	—	—	—	—	P	2	18	0	Lower-grade superphosphate, price reasonable.
	A	—	27·09	—	—	—	—	V	2	18	2	
Biphosphate.												
— .	G	—	—	—	—	—	—	P		—		
	A	64·37	1·67	59·56	—	2·98	—	V	6	17	11	
Potassic Superphosphate.												
Tipperary, N.R.	G	—	23	—	3	—	4	P	3	13	0	A good sample.
	A	—	23·52	—	—	—	4·3	V	3	10	11	
Roscommon,	G	—	23	—	—	—	4	P	3	15	0	Ditto.
	A	—	23·88	—	—	—	4·12	V	3	2	3	
Ground Rock Phosphate.												
Wexford, .	G	65	—	—	—	—	—	P	3	9	0	
	A	59·23	—	7·68	—	—	—	V		—		
Kainit.												
King's, . .	G	—	—	—	—	—	12	P	2	17	0	A good sample at a fair price.
	A	—	—	—	—	—	12·23	V	3	0	9	
Sulphate of Potash.												
Waterford, .	G	—	—	—	—	—	48·5	P	11	0	0	Ditto.
	A	—	—	—	—	—	48·65	V	11	0	2	
Muriate of Potash.												
Antrim .	G	—	—	—	—	—	50	P	10	4	3	A good sample.
	A	—	—	—	—	—	50	V	11	9	3	

RETURN giving particulars of a representative selection of Fertilisers analysed by the Department during the year ended 30th September, 1912.

Description of Fertiliser and County in which sample was drawn.	G=Vendor's Guarantee. A=Result of Analysis.	Phosphates. Total.	Phosphates. Water Soluble.	Phosphates. Citric Soluble.	Phosphates. Insoluble.	Nitrogen.	Potash.	P=Price charged per to V=Commercial Value "	£	s.	d.	Observations.
Nitrate of Soda.												
King's, . .	G	—	—	—	—	15·5	—	P	11	7	0	A good sample.
	A	—	—	—	—	15·7	—	V	12	16	11	
Nitrate of Lime.												
Dublin, .	G	—	—	—	—	12·75	—	P	14	0	0	Ditto.
	A	—	—	—	—	12·95	—	V	10	7	2	
Calcium Cyanamide.												
Dublin, .	G	—	—	—	—	18	—	P	12	0	0	Ditto.
	A	—	—	—	—	19·76	—	V	15	16	2	
Compound Manures.												
Potato Manure.												
Mayo, . .	G	—	—	7	9	3·28	1·88	P	7	10	0	A very inferior compound. Price exo bitant.
	A	14·38	6·54	—	—	3·24	2·18	V	4	3	8	
Mayo, . .	G	—	—	10	12	2·25	1·6	P	6	10	0	Ditto.
	A	20·24	10·29	—	—	2·38	1·58	V	3	14	0	
Tipperary, N.R.	G	23·74	19·97	—	—	1·26	1·2	P	3	15	0	Not specially suitab for potatoes.
	A	24·20	19·24	—	—	1·4	0·44	V	3	16	11	
Kerry, . .	G	—	21	2	—	3·25	8	P	7	10	0	A good sample o the mixture prepare according to the fo mula recommende by the Departme for potatoes.
	A	—	23·5	—	—	3·29	8·01	V	7	3	0	
Kilkenny, .	G	—	16	2	—	2·47	2·16	P	5	10	0	Up to guarantee, pric excessive.
	A	—	17·51	—	—	2·41	2·26	V	4	18	4	
Roscommon, .	G	—	15	2	—	1·64	4·05	P	6	15	0	A very expensiv compound.
	A	—	15·8	—	—	1·84	4·22	V	4	7	5	
Mayo, . .	G	—	10	—	—	3·29	3	P	7	10	0	Very poor value fo the price charged.
	A	—	12·08	—	—	3·18	3·28	V	5	8	7	
Turnip Manure.												
Mayo, . .	G	—	—	—	—	—	—	P	6	10	0	Ditto.
	A	19·69	traces	12·24	—	1·66	0·76	V	2	16	4	
Sligo, . .	G	—	16	2	—	2·5	4·5	P	5	13	9	A good sample of mixture prepared ac cording to the for mula recommende by the Departmen for turnips.
	A	—	17·22	—	—	3·29	4·56	V	6	4	3	
Mayo, . .	G	—	20	—	—	1·23	—	P	6	5	0	An unsuitable mi ture at an excessiv price.
	A	—	25·69	—	—	1·19	—	V	4	6	10	
Mayo, . .	G	24·44	20·81	—	—	1·4	·89	P	3	15	0	
	A	—	18·79	—	—	1·29	·45	V	3	17	10	

RETURN giving particulars of a representative selection of Fertilisers analysed by the Department during the year ended 30th September, 1912.

Description of Fertiliser and County in which sample was drawn.	G=Vendor's Guarantee. A=Result of Analysis.	Phosphates.				Nitrogen.	Potash.	Observations.				
		Total.	Water Soluble.	Citric Soluble.	Insoluble.			P=Price charged per ton V=Commercial Value ,,				
									£	s.	d.	
Mangel Manure.												
Wicklow, .	G	—	15	—	4	1·64	3	P	4	10	0	A fair sample.
	A	—	17·14	—	—	1·61	2·9	V	4	1	6	
Mayo, . .	G	—	12	—	—	3·75	4·75	P	6	6	3	A sample of the mixture prepared according to the formula recommended by the Department for mangels. Up to guarantee.
	A	—	13·05	—	—	3·73	5·02	V	6	6	5	
Clare, . .	G	—	17	—	2	1·03	1·62	P	4	4	9	Not a very suitable manure.
	A	—	16·39	—	—	1·05	1·6	V	3	17	6	
Oat and Grass Manure.												
Donegal, .	G	—	13	2	—	2·75	5	P	5	0	6	A sample of the mixture prepared according to the formula recommended by the Department for oats and grass.
	A	—	16·21	—	—	3·08	5·24	V	5	13	10	
Roscommon' .	G	—	18	2	2	1·03	1·08	P	4	0	0	Not a suitable mixture.
	A	—	18·22	—	—	1·05	1·1	V	3	5	3	
Universal Manure.												
Queens, . .	G	20	16	—	—	·82	—	P	4	0	0	A comparatively worthless compound.
	A	23·92	20·21	—	—	·98	—	V	3	2	8	
Bone Manure.												
Cavan, . .	G	—	20	—	5	2·00	—	P	4	8	0	Below guarantee in content of Nitrogen.
	A	25·87	21·22	—	—	1·68	—	V	3	18	4	
Dissolved Bone Compound.												
Kilkenny, .	G	25	20	—	—	1·03	—	P	4	5	0	A fair sample of the ordinary bone compound.
	A	—	23·92	—	—	·94	—	V	3	15	1	
Chemical Guano.												
Mayo, . .	G	—	15	—	—	4·11	4	P	8	5	0	An expensive guano.
	A	—	15·06	—	—	4·01	4·15	V	6	11	2	
Ammonia Guano.												
Mayo, . .	G	—	17	—	—	8	1·5	P	9	2	6	A high-grade Guano. Price reasonable.
	A	—	17·08	—	—	7·19	1·5	V	8	13	1	

RETURN giving particulars of a representative selection of Feeding Stuffs analysed by the Department during the year ended 30th September, 1912.

Description of Feeding Stuff and County in which sample was drawn.	G = Vendor's Guarantee. A = Result of Analysis.	Oil.	Albuminoids.	Price charged.	Observations.
Crushed Flaxseed.					
Armagh, . .	G	—	—	—	A good sample of home-crushed flaxseed.
	A	36·42	22·39		
Armagh, . .	G	—	—	—	A sample of foreign crushed-seed, somewhat inferior.
	A	31·35	21·87		
Cavan, . .	G	—	—	3/3 per st.	An inferior sample—Contains 29 28 per cent. cane sugar, also mouse dirt and traces of oatmeal and weed seeds.
	A	—	—		
Calf Meals.					
Mayo, . .	G	5	15	17/– per cwt.	Largely composed of ground rice and rice bran; also present, linseed cake, cotton seed meal and locust bean. Contains considerable quantities of mites. An unsuitable food.
	A	9·39	17·5		
Monaghan, .	G	7	18	11/– per cwt.	Chiefly composed of linseed cake, rice and pea meals.
	A	6·95	18·37		
Monaghan, .	G	8	23	8/3 per cwt.	Contains 20·54 % woody fibre.
	A	5·26	16·62		
Galway, .	G	—	—	—	A sample of a meal prepared according to the formula recommended by the Department.
	A	11·6	15·2		
Kilkenny, .	G	—	—	16/– per cwt.	Ditto.
	A	10·7	—		
Wexford, . .	G	5·5	12·2	7/11 per cwt.	Largely composed of oat shudes, rice meal and weed seeds. Mites present. Unfit for feeding to calves.
	A	6·07	12·26		
Cavan, . .	G	5	25	£15 per ton	Composed of cottonseed, locust bean and rice meals, lentils and maize. Contains mites. An unsuitable calf food.
	A	4·25	23·62		
Galway, . .	G	7·7	23	14/– per cwt.	Contains an excess (2·4 %) of sand.
	A	6·81	17·94		
Tipperary, N.R.,	G	4	16	16/6 per cwt.	Principally composed of rice, maize and locust bean meal. Price excessive.
	A	4·04	15·82		
Tyrone, . .	G	—	—	21/– per cwt.	Inferior calf meal. Chiefly composed of linseed cake meal, rice meal, lentils, and a little locust bean. Rather stale. Mites present. Price excessive.
	A	—	—		
Linseed Cake Meals.					
Roscommon, .	G	6	32	1/6 per st.	Commercially pure. A good sample.
	A	6·49	32·57		
Waterford, .	G	6	30	£9 12*s.* 6*d.* per ton	Commercially pure, but very stale and not in fit condition for feeding purposes.
	A	—	—		

Return giving particulars of a representative selection of Feeding Stuffs analysed by the Department during the year ended 30th September, 1912.

Description of Feeding Stuff and County in which sample was drawn.	G=Vendor's Guarantee. A=Result of Analysis.	Oil.	Albuminoids.	Price charged.	Observations.
Cotton Seed Meals.					
Limerick, . .	G	8	40	£10 per ton	Commercially pure.
	A	7·76	37·62		
Cork, . .	G	9	41	0/6 per cwt.	A good sample.
	A	10·07	39·82		
Armagh, . .	G	8	40	£8 per ton.	A good sample, though deficient (within the limits of error) in oil and albuminoids.
	A	9·42	36·78		
Pig Meals.					
Mayo, . .	G	3	10	17/6 per cwt.	Composed of rice and cotton seed meals, locust bean, a little pea meal and weed seeds. Price excessive.
	A	7·38	16·8		
Tipperary, S.R.,	G	10	12	£10 10*s.* per ton	Contains rice meal and a little linseed, weed seeds, live grubs and mites and dead weevils present.
	A	6·09	14·24		
Wexford, . .	G	6	11	£7 5*s.* per ton	Chiefly composed of rice meal, maize and cotton seed, weed seeds and a chopped fibrous material, like straw.
	A	7·21	13·56		
Cod Liver Oil Condition Mixture.					
Londonderry,	G	11	13	£1 6*s.* 8*d.* per cwt.	Fish liver oil present.
	A	13·73	12·25		
Feeding Meal.					
Louth, . .	G	10	20	£8 per ton	Chiefly composed of cottonseed and rice meal. Contains weed seeds and a little treacle. Mites and dead weevils present.
	A	9·03	22·26		
Dairy Meal.					
Clare, . .	G	8	18	£7 15*s.* per ton	Composed of inferior materials.
	A	6·67	16·62		
Linseed Cake.					
Monaghan, .	G	10	31	£10 2*s.* 6*d.*	A good sample, though slightly deficient in oil.
	A	9·32	31·62		
Cork, . .	G	9·5	31	£10 2*s.* 6*d.* per ton	Commercially pure sample.
	A	9·39	30·31		
Queen's, . .	G	12	29	£12 per ton	Do.
	A	10·42	32·81		
Decorticated Cotton Cake.					
Monaghan, .	G	9	41	£8 12*s.* 6*d.*	A good sample.
	A	8·93	41·97		
Monaghan, .	G	8	40	£8 8*s.* 0*d.*	Sample commercially pure.
	A	9·3	40·25		
Queen's, . .	G	9	41	£9 2*s.* 6*d.*	Contains an excess (1·95 %) of sand.
	A	10·52	38·62		
Galway, . .	G	8	40	£10 per ton	A good sample.
	A	8·24	41·35		

RETURN giving particulars of a representative selection of Feeding Stuffs analysed by the Department during the year ended 30th September, 1912.

Description of Feeding Stuff and County in which sample was drawn.	G = Vendor's Guarantee. A = Result of Analysis.	Oil.	Albuminoids.	Price charged.	Observations.
Undecorticated Cotton Cake.					
Waterford, .	G	6	24	£6 7*s.* 6*d.* per ton	Sample discoloured by heating.
	A	5·51	21·43		
Linseed and Cotton Seed Cake.					
Kildare . .	G	9	33	£8 10*s.* per ton	An inferior sample of undecorticated cotton cake.
	A	5·27	19·25		
Germ Cake.					
Cavan, . .	G	7·17	14	7/6 per cwt.	Sample of maize germ cake.
	A	0·93	14·87		
Extra Oil Cake.					
Queen's, . .	G	10	20	£8 11*s.* 5*d.* per ton	Sample of cake made from inferior materials.
	A	8·44	19·69		
Soya Cake.					
Armagh, . .	G	4	43	£8 5*s.* per ton	A good sample of this cake.
	A	5·32	42		
Queen's, . .	G	1	43	£6 17*s.* 6*d.* per ton	A sample of "extracted" soya cake.
	A	2·69	40·88		
Fattening Cake.					
Tipperary S.R.,	G	10	20	£8 5*s.* " per ton	Sample of compound cake made from inferior materials.
	A	9·78	21		
Waterford, .	G	10	20	£8 per ton, retail. £6 17*s.* 6*d.* f.o.b. Liverpool	Contains amongst other ingredients rice meal and cotton seed husk. An unsuitable article.
	A	9·83	21·42		
Cod Liver Oil Cake.					
Tyrone, . .	G	10	15	21/- per cwt.	Below guarantee in content of albuminoids. Chiefly composed of rice meal and locust bean with some fish liver oil.
	A	10·57	9·19		
Preparation containing Treacle— Soya Treacle Cake.					
Wexford, . .	G	1·5	42·0	£7 10*s.* per ton	Below guarantee in content of oil and albuminoids. Contains 35·55 per cent. carbohydrates.
	A	0·9	36·0		
Molasses Meal.					
Kerry, . .	G	·75	7·5	7/- per cwt.	Contains 51·39 % carbohydrates. Consists of treacle absorbed in peat dust.
	A	·63	10·92		
Dried Distiller's Grain.					
King's, . .	G	8	20	£5 15*s.* per ton	Contains 40·45 % carbohydrates.
	A	7·25	19·25		

WEEDS AND AGRICULTURAL SEEDS (IRELAND) ACT, 1909.

TABLE showing the number of samples received, the number which were found unsatisfactory, and the percentage of the total number received which were unsatisfactory, in each county.

County	Number received	Number unsatis-factory	Percentage of number received which were unsatis-factory
Antrim	174	11	6
Armagh	40	4	10
Carlow	45	5	11
Cavan	34	16	47
Clare	64	27	42
Cork	153	40	26
Donegal	83	23	28
Down	91	10	11
Dublin	127	14	11
Fermanagh	23	1	4
Galway	61	17	28
Kerry	211	135	64
Kildare	69	10	14
Kilkenny	176	18	10
King's	39	2	5
Leitrim	4	4	100
Limerick	15	1	7
Londonderry	116	11	9
Longford	34	13	38
Louth	53	2	4
Mayo	78	48	62
Meath	40	4	10
Monaghan	13	3	23
Queen's	64	3	5
Roscommon	38	27	71
Sligo	34	20	59
Tipperary (N.R.)	92	9	10
„ (S.R.)			
Tyrone	75	12	16
Waterford	108	23	21
Westmeath	44	13	30
Wexford	77	8	10
Wicklow	67	6	9

Table showing a Summary of Germinations of all Samples tested during the Season, 1912.

Name of Seed	100%–76%	75%–51%	50%–26%	25%–0%	Totals
Barley . . .	1	—	—	—	1
Perennial Rye .	33	129	79	19	260
Italian Rye . .	24	87	52	11	174
Meadow Fescue .	4	3	2	1*	10
Meadow Foxtail .	0	1	1	1	3
Timothy . .	33	3	3	2	41
Cocksfoot . .	3	14	2	0	19
Crested Dogstail .	2	0	0	0	2
White Hay . .	0	1	10	19	30
Grass Seeds .	1‡	3	1	1	6
Blowings . .	0	1	5	2	8
Holcus . .	0	0	2	0	2
Red Clover . .	54	35	10	8†	107
White Clover .	10	28	13	4	55
Alsike Clover .	7	23	10	0	40
Trefoil . .	2	6	3	1	12

Mangel.—12 samples germinated between 150% and 100%, 3 samples 100%–76%, 2 samples 75%–51%, 1 sample 50%–26%, none 25%–0%. Total 18.

* In reality this sample was Perennial Rye.

‡ D.A.T.I. mixture.

† Including two samples of Trefoil.

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INSTRUCTION FOR IRELAND.

REPORT

OF

PROCEEDINGS

UNDER

THE FERTILISERS AND FEEDING STUFFS ACT, 1906,

AND UNDER

PART II. OF THE WEEDS AND AGRICULTURAL SEEDS (IRELAND) ACT, 1909,

FOR THE YEAR

1911-12.

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